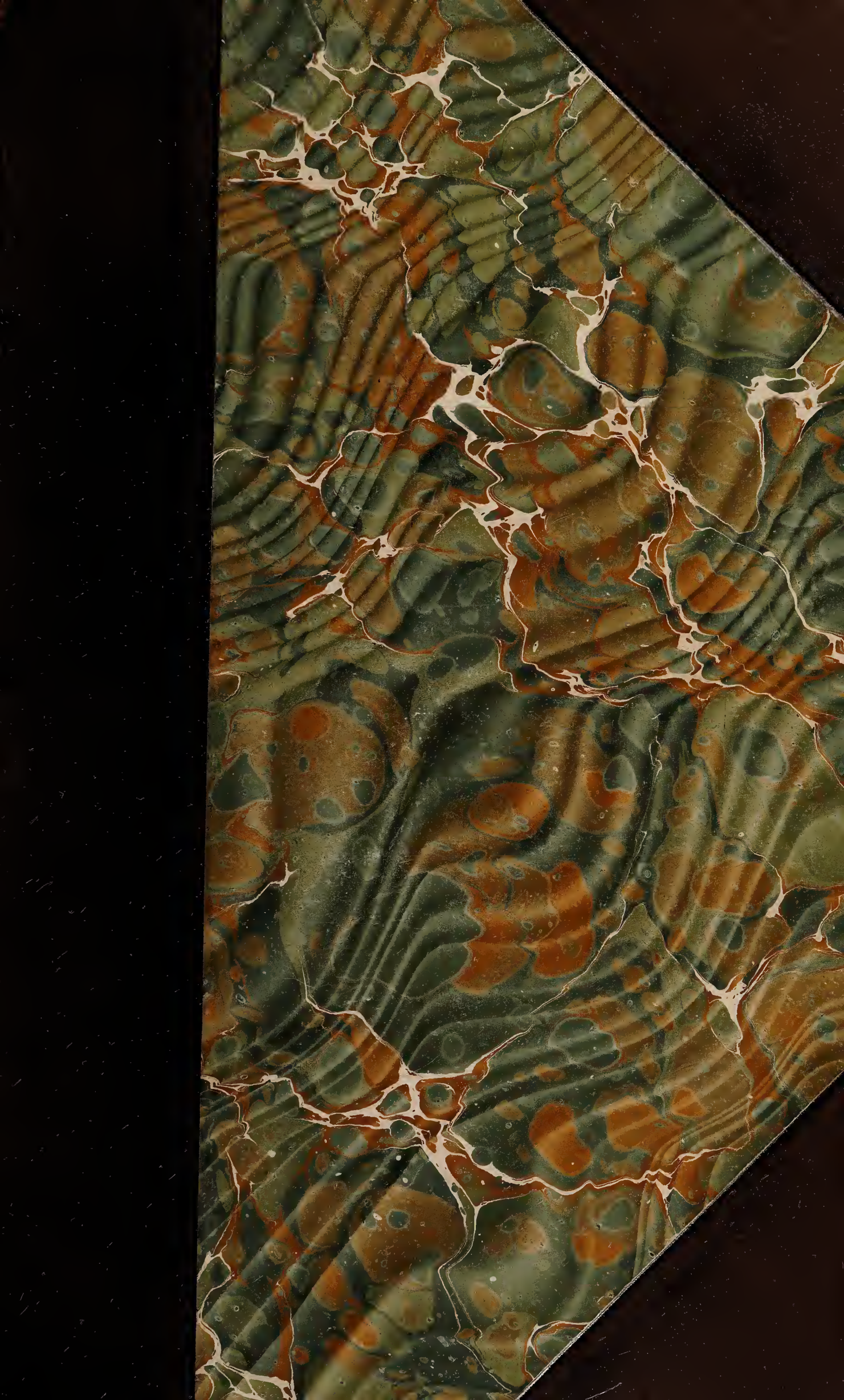

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THE

ART of MIDWIFERY

REDUCED to PRINCIPLES:

In which, are explained

The moſt ſafe and eſtabliſhed Methods of Practice, in each Kind of Delivery;

WITH A

Summary Hiſtory of the Art:

Tranſlated from the FRENCH Original,

Written by the late

Dr. ASTRUC, Royal Profeſſor of Phyſic at Paris, and Phyſician to the French King:

To which, is added

An Appendix, by the Tranſlator;

CONTAINING

Illuſtrative Remarks on Conception and Pregnancy; and on thoſe Particulars, taught by Dr. ASTRUC, which vary from the Methods adopted by the beſt *Accoucheurs* here.

LONDON:
Printed for J. NOURSE, Bookſeller to his Majeſty, oppoſite Catharine Street in the Strand.

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PREFACE

OF THE

AUTHOR.

I DECLARE here, in the very front of this work, that I have never practiſed midwifery: though I undertake, nevertheleſs, to teach the art of delivery. As this may, conſequently, appear paradoxical, it demands ſome explanation.

I was appointed, by the Faculty of Medicine at Paris, in the year 1745, to give to the midwives, and their pupils, a courſe of lectures on midwifery; which was then intended to be eſtabliſhed in the phyſic ſchools; and which has been ſince continued. I complied, without heſitation, with the requeſt of the faculty; though I had only then that general knowledge of the ſubject, which every phyſician, who has

has a due regard to his profeſſion, ought to have in all branches of the medicinal art; even thoſe he does not, nor ever intends to practiſe. This courſe was not, however, to be given, till ſix months afterwards: and I took the advantage of that interval, to read, or ſtudy, all the treatiſes in the art of midwifery, which have appeared for the laſt thirty years, either in Latin or French. I found, in almoſt all of them, matters, that were juſt, uſeful, important, and deſerving of approbation: but they were written without order, or method; full of trivial articles, repetitions, and vague or ill reported obſervations; and diſplayed an attempt to ſhine, by introducing a ſhow of learning, miſplaced and undigeſted; in which difficult queſtions in phyſic were dully diſcuſſed, without being underſtood: which depreciated the other more valuable contents of the works. In this manner, were compoſed the greateſt part of theſe voluminous books: where the good and pertinent matter was buried in a heap of the frivolous and foreign. I muſt, nevertheleſs, except ſome, though a ſmall number, written with order and preciſion: where there is nothing but what is uſeful; and where the authors appear very ſuperior to the ſubject.

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I diſpenſed with what might be diſguſtful; read theſe works with attention; collected from them what was uſeful and good; and compared the different modes of practice ſet forth in them; from which I ſelected thoſe, that appeared to me beſt, and moſt authorized. By this means I made a compilement, which ſerved, if I may uſe the expreſſion, as a ground to the public lectures I gave; and which were received with approbation. I was appointed again to the ſame office the two following years; and I took the opportunity of that time, to compleat what I had before procured, by freſh reading, freſh extracts, and freſh reflections; which rendered my firſt compilement more extenſive, and, I may venture to ſay, more valuable.

This compilement had, however, gone out of my mind, and I had no intention of making any farther uſe of it; when it was repreſented to me, that though the midwives at Paris could obtain inſtructions, and, perhaps, alſo thoſe in other great cities of the kingdom; yet it was obvious, there was no opportunity for it in the middling towns of the provinces; and ſtill leſs in the country: that there was not even any one book proper for them, by which they could learn, in the leaſt, the principles of their art: that they had only an old rote,

which

which was tranſmitted down from one to another: and that it was a matter of regret, to ſee young midwives obliged to purchaſe, by the moſt ſervile courtſhip, what the older would or could communicate to them; which was often ſcarcely any thing; and never more than a very little.

Endeavours were uſed to perſwade me, that the lectures which I had given in the phyſic ſchool, to the midwives at Paris, would be a very uſeful work for thoſe in the provinces, if I would take the trouble of digeſting it: but I could not, nevertheleſs, reſolve then to do it. It was the publication of the *treatiſe on the diſeaſes of women*, that I have lately given, which determined me in this point. I reckoned, that this work would not be compleat, if I did not ſubjoin to it a treatiſe on child-birth; which is one of the moſt general diſorders of women. I then had recourſe to my former collection; and, after having made the alterations, corrections, and additions to it, which appeared neceſſary, I compoſed a work from it for the uſe of the public. In the doing this, I propoſed three points to myſelf, which I believe requiſite to all didactic works; that is to ſay, thoſe formed with a view to inſtruct, or teach.

The *firſt* is, to purſue an accurate method; a regular order in putting every matter in its proper place: and to begin with the things that are moſt eaſy, go on to thoſe which are more difficult, and leave nothing behind which has not been ſufficiently explained. By this means, the reader paſſes, without being detained, from one difficult chapter, to another ſtill more difficult; and attains, without trouble, to the underſtanding the moſt obſcure parts of the ſubject which he ſtudies. *Ordinis hæc virtus erit.*

The *ſecond* is, to follow the counſel of Homer, who ſays, *Quicquid præcipies eſto brevis.* In this view, I have retrenched too particular details, digreſſions, and uſeleſs reflections: and I have confined myſelf to what is really eſſential in the methods of practice I have explained. Hence, the mind, not being led aſtray, is wholly engaged on the object preſented; and comprehends it more effectually.

The *third* is, to be perſpicuous. This quality is abſolutely neceſſary to a didactic work, deſigned for women; who are not capable of following an obſcure and complex manner of reaſoning. On this account, I have taken care to write in a ſimple ſtyle; to uſe ſhort periods without inverſion; and to apply all the words in their natural ſignification, without any metaphors.

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If, by my attention to thoſe matters, I have had the ſucceſs to give an elementary treatiſe on the art of midwifery, which ſhall be proper for midwives, and will ſerve to inſtruct them, I ſhall be better ſatisfied with having made an uſeful compilement, than I ſhould be, with having publiſhed a work full of ingenious and new reſearches, of a curious nature only.

I have been ſtrict in purſuing the plan I laid down; and have never deviated from it, except in the ſummary hiſtory of the art of midwifery; and the chapter on the Cæſarean operation; where ſome may think I have accumulated too many quotations. But I could not avoid it: as there was no medium. For I muſt either have omitted thoſe two ſubjects; which I thought was not proper; or I muſt have treated them as I have done. The midwives may make uſe of what they underſtand; and may let alone what they do not; and what, indeed, was not intended for them.

I may, perhaps, be blamed, for not having explained ſufficiently, in detail, the different kinds of laborious deliveries; which come from the bad conformation of the baſon, in which the head of the child is locked. But I am provided with a juſt excuſe for that.

Thoſe faulty conformations, which render the delivery laborious, are generally the con-

conſequences of the debauches of the parents. They are rare in the provincial towns; and unknown in the country: and it is for midwives in thoſe places that I write.

Moreover, in order to perform theſe deliveries, manual dexterity alone is not ſufficient. Particular inſtruments are neceſſary, which midwives have not; and of which the greateſt part are not able to make any uſe: but if there be ſome, who are deſirous to be better informed with relation to ſuch deliveries, and the inſtruments which are requiſite for them, I recommend them to a book, intituled *Obſervations on the cauſes and accidents of ſeveral laborious deliveries*, printed at Paris in 1749: and alſo the *Sequel of theſe obſervations*, printed in 1751: which I am certain they will not read, without learning much from them, if they be able to underſtand them.

To conclude, I exhort the midwives to give leſs of the compoſitions with ſtrong liquors in them, to the women in difficult and long labours. I know, that theſe compoſitions came originally from us: that the books of our ancient authors are full of them: that it is by tradition the midwives communicate them ſucceſſively to each other: and that it makes a great part of the knowledge of moſt of them. But theſe compounds with ſtrong liquors heat much, often occaſion fever, and cannot change the bad

bad poſition of the child. It is proper, in theſe caſes, which are frequent, to know how to turn the child; and deliver it by the feet. The operation is not difficult; particularly when it is performed early: the *uterus* being then ſupple and lax: and, if the midwife be ignorant how to do it, ſhe ought to renounce her profeſſion.

PRE-

PREFACE

OF THE

TRANSLATOR.

THE treatiſe on the art of midwifery, of which a tranſlation is here given, was, as the late Dr. Aſtruc, the author of it, declares, written principally for the uſe of the midwives in France; particularly thoſe in country places; who, from the want of ſome aſſiſtance of this kind, were left to themſelves in the moſt helpleſs ſtate of ignorance, as well of the right methods of practice, as principles of their art.

The great reputation he has borne in other parts of the medical profeſſion, makes it needleſs to ſay any thing of his character, and abilities in general: and he has himſelf ſet forth, in the preface to this work, the pretenſions he had to knowledge in midwifery;

wifery; and the means of his obtaining it. He was not, as he acknowledges, a practitioner in the art of delivery: but such was the eſtimation in which he was held, as to his general qualifications as a phyſician, particularly with reſpect to female diſorders; and his conſequential experience and opportunity of obſervation, as well in what related to pregnancy and delivery, as to others; that he was called upon, by the faculty of medicine at Paris, preferably to any of the profeſſed *accoucheurs*, to give a courſe of lectures to the midwives of that city. In conſequence of his taking this office upon him, he made, as he ſays, a methodical collection of the beſt matter, he could ſelect from all the authors who have treated of midwifery, in French or Latin; and to this he ſubjoined what he had learnt from his own remarks, of the methods of the preſent Pariſian practice: which his ſituation, as a phyſician conſulted in the moſt extenſive manner in all the diſorders of women, had given him the opportunity of knowing perfectly well. The ſubſtance of what he delivered in that courſe of lectures, compoſes this work; intended, as he ſays, for the uſe of thoſe, who could not have the benefit of it in the other way. But he might further have preſumed the publication of it to be equally uſeful to thoſe, who had attended his courſes;

courſes; conſidering how little is well conceived, and how much leſs retained afterwards, from the oral communication of lectures, if there be no means of reviving to the memory, in an accurate manner, by reading, the particulars that have been thus taught; in order to the more mature conſideration, or occaſional recollection of, them: which holds good ſtill more ſtrongly in the caſe of women, than in that of perſons accuſtomed to methodical inſtructions. He aſſerts, likewiſe, in the preface, that he has been particularly attentive, as to his manner of writing in this work, to adapt himſelf to the capacity of midwives in general: and he has indeed done ſo, in the practical part, in moſt inſtances: though it muſt be allowed, the habit of writing, and thinking, in a more learned and technical ſtyle and manner, has ſometimes raiſed him, contrary to his intention, above their level, both in expreſſion and ſentiment: but where this could be remedied in the tranſlation, by ſubſtituting, or adding more familiar words, it has been carefully done. Very low or vulgar expreſſions, or names of things, are, however, avoided; as being diſguſtful to ſome readers, and not more clear or explicit to any, than proper terms, of which the ſignification is explained in the work itſelf, when they are firſt introduced.

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The ſame want of opportunity of duly learning their art, which induced the faculty of medicine at Paris to eſtabliſh a courſe of lectures for the improvement of the midwives of France, holds good, in an equal degree, as to thoſe of Great Britain: many of whom have not more knowledge, nor better means of procuring it. For though there are ſome books on this ſubject in our language, from which, by a proper application, they might gain very material inſtruction; yet none of them fully come up to the notion of a work, calculated for the eaſy and complete information of midwives, in the principles and practice of their art. Of the books of this kind already publiſhed in Engliſh, the greateſt part were not intended particularly for the uſe of women; but rather of men deſigned to undertake the office, as *accoucheurs*, in difficult and hazardous caſes; and who are ſuppoſed to have previous learning and knowledge in anatomy and phyſiology. Theſe books were, therefore, written in technical language; and explained the ſubject by reaſonings, deduced from the doctrines of theſe branches of ſcience; without a previous knowledge of which the contents were incomprehenſible. This rendered them abſtruſe and unintelligible to women, wanting theſe preliminary qualifications for reading them; while a minute detail of the inſtruments and operations required

quired in difficult caſes, where manual aſ-ſiſtance fails; and of the medical treatment of diſeaſes attendant on pregnancy or child-bed; or a very large compilement of parti-cular obſervations, and caſes; made them too complex or voluminous for this purpoſe; and diſcouraged the midwives from the ſtudy or occaſional uſe of them. Some treatiſes there are, indeed, profeſſedly in-tended for the uſe of women: but they are very indifferent compilements, of what is found in ſome other writers, in general the older and worſt; and ſhew the authors had not a very great capacity for learning, much leſs for teaching this art. I ſpare to make any remarks here on a work, written by a late eminent teacher and practitioner of midwifery, further than to ſay, that though I think it the beſt which ever was publiſhed on this ſubject, it is yet defective in ſome points, and exceptionable in others; and has by no means anticipated the utility of a good work on the ſame: either in a ge-neral view, or with reſpect to the particular inſtruction of women.

It was preſumed, therefore, conſidering the ſimilarity of the caſe of the Britiſh and French midwives, with reſpect to means of information regarding their office, that a tranſlation of this treatiſe might be of the ſame advantage to the one, as the original to the other. And it muſt be allowed, that

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the plan, diſpoſition, and more complete enumeration of the particulars neceſſary to be known to midwives, give it a peculiar merit, both with reſpect to brevity, perſpicuity, and the ampler view of the ſubject; in which, it excells any other work of this kind before publiſhed. At the ſame time it muſt be admitted, that ſomething more than a meer tranſlation was abſolutely wanting, to render it of real value, according to the approved practice of this art in our own country. Dr. Aſtruc took up his notions of the theory of midwifery, as far as it depended on the principles of phyſiology, and anatomy, from what had been broached by the writers in earlier, and leſs enlightened times: and he was more zealouſly diſpoſed to eſtabliſh the opinions, he had already imbibed, than to liſten to new doctrines. He has accordingly advanced, in this work, ſeveral ſpeculative matters; of which, though they were formerly received notions, the error is now well known to more accurate enquirers. With reſpect, likewiſe, to the practice, following the preſent French methods, founded on thoſe miſtaken principles, or defective for other reaſons; and which have not been reformed, as among the more able with us, from juſter views of facts, and reaſonings on them; he has adopted ſeveral particulars, that are materially wrong: and omitted, at the ſame time,

others

others eſſentially requiſite to be underſtood by thoſe, to whoſe uſe the work is appropriated. It has been thought neceſſary, therefore, in order to render this treatiſe of real utility here, to add an ample ſupplement, in which the theoretic errors might be rectified; the more faulty methods of practice amended; and the material omitted articles ſupplied: and to which ſhould be prefixed the forms of preſcription of the Pariſian *Pharmacopeia*, for the compound medicines, that are directed in Dr. Aſtruc's work, and are there intended to be prepared conformably to that *Pharmacopeia*.

The addition of the recipes from the Pariſian *Pharmacopeia*, for the medicines mentioned by the author, is certainly very requiſite, in order to render them uſeful, or at all intelligible; at leaſt to ſuch as are not poſſeſſed of that *Pharmacopeia*, or able to read it in the original Latin: which muſt be the caſe of nearly all, for whom this book is principally deſigned. For as to ſome of theſe medicines, the very names are not known in this country; and much leſs the ingredients, proportion, or preparation: and the *theriaca*, and ſome other more general officinal compounds, which we have in common with the French, as to the name and general form, vary, nevertheleſs, from thoſe of our *Pharmacopeia*, in the proportion of the capital ingredients.

Whence it is neceſſary, in order to make due allowance for ſuch difference, in the medical exhibition here, where one is to be ſubſtituted for the other, to be able to compare them, as to the reſpective quantities of ſuch ingredients. They are, therefore, all inſerted at large, except the theriaca, Madam Fouquet's plaſter, and the anodyne tincture. The form of the theriaca is omitted, becauſe the great multiplicity of ingredients; many of them compounds of numbers of others; which, nevertheleſs, did not make it differ eſſentially from ours but in the proportion of *opium*; rendered it expedient to avoid ſo voluminous a quotation: and to give the quantity of opium only comparatively to that in ours; on which the variation of the reſpective doſes alone depends, when one is uſed inſtead of the other. Madam Fouquet's plaſter, and the anodyne tincture, are left out from a reaſon of neceſſity. For neither of them have a place in the Pariſian *Pharmacopeia*; nor are to be found in *Baumé*'s *elements of pharmacy*, the lateſt, and a very complete view of the French practice: and I did not, on this account, know where to procure them. Nor was it, indeed, of conſequence; for the intention of their uſe being very clear, others, of the ſame nature, may be ſubſtituted with equal advantage. The firſt appendix may,

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I preſume, be therefore allowed to be a very neceſſary addition to a tranſlation of this work.

The ſecond appendix contains two parts; the theoretic, and practical: into which it is accordingly divided.

The firſt part of the ſecond appendix, relating to the theoretic points, may not appear ſo properly to belong to this work, according to the profeſſed deſign of it: nor did it, in fact, in the original, where the detail of theory is, for the moſt part, avoided; as being neither eaſily attainable, nor indiſpenſibly uſeful to midwives. But the practical part of the ſupplement ſeemed to make the introduction of it neceſſary here: and other reaſons conduced alſo to make it expedient. Dr. Aſtruc, and the reſt, who have maintained the ſame opinion, as to ſeveral articles of practice propoſed to be reformed in the ſecond part of this APPENDIX, founded them on the theoretic principles, which are here controverted in the firſt: and while thoſe principles ſtood their ground, and were held as juſt or true, the practical points, which were right deductions in ſeveral inſtances from them, muſt have been admitted to be juſt and proper likewiſe. It would, conſequently, have appeared neither fair, nor ſatisfactory, to have arbitrarily cenſured eſtabliſhed rules of practice taught by him,

without ſhewing how they were wrong; and giving adequate reaſons for it: and theſe reaſons could not be made comprehenſible and concluſive, without demonſtrating the error of the ſpeculative principles, on which they had been founded; and ſubſtituting ſuch as are true in their ſtead. This, I apprehend, rendered it extremely requiſite to introduce the theoretic part. But as the work was not intended by Dr. Aſtruc, notwithſtanding he modeſtly waves ſaying ſo expreſly, for the uſe of midwives ſolely, but alſo for that of the more unlearned *accoucheurs*, this additional part will certainly be very acceptable to them: who may not have opportunities of collecting information of the late improvements in the more abſtracted kind of knowledge of what relates to their art; but who may, nevertheleſs, be very capable of availing themſelves of it when thus preſented to them. As to the reſt, I may properly repeat, what Dr. Aſtruc himſelf has ſaid of part of the work in his preface. "The midwives may "make uſe of what they do underſtand; "and may let alone what they do not; "and what indeed was not intended for "them."

The examination of the queſtion, reſpecting *the exiſtence of the* animalcula *in ſemine*, which makes the ſubject of the firſt ſection, is perhaps of the leaſt moment,

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with relation to the proper ſubject of this work; and the moſt incapable, likewiſe, of a poſitive determination, of any in the *appendix*. As it, however, admits of ſhewing, that there is not hitherto any demonſtration of the certainty of ſuch *animalcula*; but, on the contrary, a very conſiderable foundation, for believing their exiſtence to be an erroneous notion; and as Dr. Aſtruc has, not only from the preſumption of their exiſting, but from the particular form, and other qualities which he gave them, deduced many of the reaſons on which he eſtabliſhed the belief of ſeveral matters, that are to be refuted in the ſubſequent ſections; I thought it expedient, for properly clearing the way, to take it under conſideration.

The manner of adheſion of the placenta *and* chorion *to the* uterus, which makes the ſubject of the ſecond ſection, is a more material conſideration than the preceding; and allows of greater demonſtration. The errors here refuted, lead immediately to practical conſequences: and, while retained, are very liable to perplex and deceive the midwife in her operations; as well as her judgment, with reſpect to ſeveral caſes, if ſhe reaſon in the leaſt on them.

The refutation of the erroneous opinion, *that the natural poſition of the child in the* uterus *is with its head uppermoſt*; and that

it ſuffers a culbute, *or turning, before the coming on of labour*; which make the ſubject of the third ſection; are of conſequence to the introduction of a more rational judgment and practice in midwifery. Theſe opinions are rejected now, by the more accurate and ſenſible anatomiſts and phyſioligiſts, from palpable facts obſerved in the moſt ſimple manner: but they are believed by thoſe, who have not the opportunity of being informed of the later advances in knowledge: and indeed they are yet even taught by ſome readers of lectures in our own country. It was, therefore, very material to endeavour to remove this error, which, by the uſe Dr. Aſtruc himſelf makes of it on ſeveral occaſions in his work, cannot fail to lead to falſe prognoſtication, and wrong judgments.

The obſervations on *the manner in which the* fœtus *is nouriſhed:* and *whether there be any communication of blood from the mother to the child; or if there be not, of what other kind the nutritive humour is*; furniſh the contents of the fourth ſection. The ſubjects of them are the moſt important ſpeculative queſtions of that part of phyſiology, which regards the pregnant œconomy: and have moſt divided the ſentiments of thoſe, who have perſued this kind of inquiry. The far greateſt part of writers have maintained the communica-

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tion of blood betwixt the mother and child: but the abler anatomiſts, and phyſiologiſts of the preſent times, have agreed in rejecting it: holding, that the child is nouriſhed by ſome lymphous or lacteous fluid, abſorbed by the umbilical veſſels in the *placenta:* and there is, perhaps, no point, which has been ſo much diſputed, that admits of clearer demonſtration. Dr. Aſtruc formed an *hypotheſis*, which partook of both opinions; and retained the notion of a transfuſion of blood, as well as of lacteous fluid. It is delivered at large, in his treatiſe *on the diſeaſes of women:* and he reaſons from it in various parts of this work. His *hypotheſis* is, however, contrary to ſome very apparent facts; and has, indeed, much more of fancy than of reaſon for its foundation, in the way that he accounts for it. The practical conſequences of this erroneous notion, rendered the refutation of it requiſite to the views of the *appendix*; and the more, as it may be done on concluſive principles. But though it admits of demonſtration, that there is no communication of blood from the mother to the child, it ſtill remains an undecided point, whether the nutritive matter, imparted by the mother, be a ſimple lymph or *ſerum* of the blood, ſtrained off by the veſſels of the *placenta*, or ſome more oily or chylous fluid. There ſeems, from analogy, as well as ſeveral re-

lative appearances in the *uterus*, and *placenta*, to be, by far, the moſt reaſon for the latter of theſe conjectures; but there is not hitherto any fact obſerved, that renders the concluſions certain. As it is, nevertheleſs, an important article in the hiſtory of the pregnant œconomy, I have ſtated all the arguments the preſent obſervations on that point can afford; and hope it will conduce to the gaining ſuch further lights, as may clearly elucidate the remaining doubts concerning this queſtion.

The examination into *the nature of moles and falſe conceptions*, forms the contents of the fifth ſection. The credulity, and proneneſs to adopt chimerical notions, ſo palpable in midwives and nurſes; and indeed, I may ſay, formerly, in the men, who have been concerned in midwifery; have given riſe to the ſame abſurdities of opinion, with reſpect to the irregular uterine productions, as to the other accidents of conception and parturition. Hence ſtrange relations of moles, and falſe births, have been propagated; and correſpondent doctrines on them taught ſo generally, that ſcarcely any body has dared to entertain doubts reſpecting them. Dr. Aſtruc has, however, gone half-way towards rejecting them: but, unhappily, at the ſame time that he has exploded the notions of falſe conceptions, in this ſenſe of the word; and

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reduced the whole to the conſequences of abortion, in the caſe of true conceptions, or real embryos; he has yet retained the erroneous belief of the production of ſome of the bodies called moles, by the growth of the *placenta*, left adhering to the *uterus* after the periſhing, or delivery of the *embryo*, or *fœtus*. In this, notwithſtanding he has the concurrent authority of almoſt all the writers on this ſubject, he is ſtill miſtaken; as appears from a multiplicity of obſervations, and the preſent juſter intelligence of the real conformation and accidents of the parts. This error has led him, and the others who embrace it, into ſeveral practical deductions equally miſtaken. Whence an indiſpenſible occaſion aroſe, for ſhewing the faultineſs of this opinion: to the doing which, in a more ſatisfactory way, Dr. Smellie's reports of caſes and obſervations has contributed ample matter.

Theſe are the contents of the *firſt part* of the ſecond appendix, and the reaſons for their inſertion. Whatever ſentiments may be entertained of the propriety of introducing them into this work, as being of a more ſpeculative nature, than may ſeem conſiſtent with the original deſign of it; the aptneſs as well as utility of the *ſecond part* which wholly regards the practice, can admit of no doubt; allowing

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the particulars to be juſt, and worthy conſideration.

The conduct to be obſerved in floodings during pregnancy, which is the ſubject of the firſt ſection of this part, is a very important concern: as ſuch caſes frequently require, for the prevention of fatal conſequences, the inſtant aid of the moſt powerful remedies. Dr. Aſtruc, nevertheleſs, moſt probably from ſome inattention, has omitted the recommending the only kind of medicines, that can be of any material effect. I preſume this to be from ſome inadvertence: becauſe, in his *treatiſe on the diſeaſes of women*, he ſeems to be well apprized of the efficacy of theſe medicines in ſuch caſes. It might, indeed, have been imagined, he made this omiſſion, as not thinking the giving inſtructions, for the uſe of internal medicines, a proper part of the contents of this work; the adminiſtration of them not being a part of the office of the midwife; had he not ſhewn the contrary on every other occaſion; and, even here, given a copious detail of internal medicaments, though of a trivial nature; and inſufficient to the intention. It is not in general, as muſt be allowed, the proper office of midwives to preſcribe remedies; nor ſhould they take it upon them, where other more regular aſſiſtance can be had. But, as there are many caſes where ſuch aſſiſt-

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ance cannot be obtained; and others, where, in ſpite of any prohibition, the midwives will give ſome medicines; it is better they ſhould be inſtructed in chuſing ſuch as are proper, than left to follow what ignorance or infatuation has put in their way, by the idle traditions that prevail among them.

The treatment of convulſions which happen before, or during labour, that makes the ſubject of the ſecond ſection, is leſs important than the preceding: as thoſe which require any interference of medicine occur much leſs rarely. But as ſome ſuch caſes may be fatal, when not remedied; while at the ſame time they admit of relief in a more certain manner than moſt others; and as the means of relief propoſed by Dr. Aſtruc, ſeem as inexpedient in their uſe, as they are inadequate to the intention; it was very proper to ſupply the defect he had left.

Remarks *on the poſition, in which women may be beſt delivered; and of the moſt commodious preparations for it*; furniſh the contents of the third ſection. Theſe two points certainly make a very material part of the midwife's attention, and care: and yet Dr. Aſtruc has been very ſhort and inexplicit, in this treatiſe, with relation to them. The ſuper-adding more minute, and indeed more judicious, inſtructions on theſe heads,

heads, cannot therefore fail of utility here: and the account of the beſt methods adopted in London, as they are amply deſcribed by Dr. Smellie in his book, very materially contribute to ſuch inſtructions; and to the completing this part of the work.

The conduct to be perſued in natural labours, not attended with any peculiar difficulty, makes the ſubject of the fourth ſection. In this principal part of the office of the midwife, Dr. Aſtruc had directed ſome means to be uſed generally, which ought only to be employed on particular occaſions: as being both unneceſſary, and injurious, where no peculiar ſtate of the patient makes them requiſite; and indeed frequently not practicable. He has alſo omitted ſome of the inſtructions for giving aſſiſtance in ſuch caſes as may demand it. It has been, therefore, endeavoured to ſupply ſuch inſtructions in the moſt brief and perſpicuous manner, conformably to the proper nature of the ſubject, and the juſter notions of the preſent more enlightened and able practitioners here.

Directions for the treatment of the child after delivery, form the fifth ſection. This reſpects another principal branch of the midwife's duty; with relation to which, Dr. Aſtruc has omitted ſome of the moſt eſſential matters; and been leſs judicious in his inſtructions as to others. In the manner of

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tying the umbilical cord, he has perſued the former method; which, nevertheleſs, from unqueſtionable principles of anatomy and phyſiology, is now demonſtratively known to be erroneous. He has, alſo, adopted the vulgar methods in uſe, of cleanſing the child, which have ſome improprieties in them: and has neglected any particular directions about the dreſſing it: tho' great miſchief attends, in numerous inſtances, from the miſmanagement in this point; the preventing which, the midwife ought to eſteem as a material part of her duty. But the greateſt omiſſion made in this part of the work, is the ſilence with reſpect to the diet of children; or the treatment of them when ill, in thoſe caſes where the adminiſtration of remedies fall unavoidably on midwives. The error of common uſage in the choice and preparation of the food of children, is the ſource of far more numerous and dangerous illneſſes to them, than all other cauſes taken together: and yet there is no book written on the ſubject of midwifery, not excepting even Dr. Smellie's, which does not rather countenance than correct the eſtabliſhed wrong methods of management in this particular. It was, therefore, peculiarly expedient, to inlarge on theſe points, and to give full inſtructions for the reforming the faulty practice. The methods inculcated by thoſe inſtruc-

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tions are ſuch, as are ſhewn to be demonſtratively right, either from a due conſideration of the general nature of the ſubject: or from ſuch phyſiological and medicinal principles, as will not admit of being controverted.

The conduct to be obſerved, when the placenta, *membranes, or any part of them, remain after the delivery of the child,* furniſhes the matter of the ſixth ſection. In this moſt important article of the midwife's care, Dr. Aſtruc, as well from the authority of the general practice in France; and indeed I may ſay elſewhere, with the exception of ſome few of the moſt able *accoucheurs* here; as from ſome miſtaken notions, with reſpect to the conformation and œconomy of the uterine parts; has fallen into the recommending an error of practice, productive of more miſchief than any, or, I may juſtly ſay, all others, which ever crept into the obſtetricarian art; peculiarly replete as it has been with errors. The conſtant forcible delivery of the *placenta*, without any peculiar neceſſity; though till lately made an invariable rule of practice here as well as elſewhere, under penalty of the higheſt cenſure and diſgrace to the operator, who ſhould be convicted of having neglected it; is yet a moſt injurious and deſtructive practice; as may be evinced, even to demonſtration, on the cleareſt principles.

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And it is greatly to the honour of our country, and the preſent profeſſors of this art, that ſome of them have had the courage, as well as genius, to begin a reformation in this, and moſt of the other abſurdities of the former methods: which will doubtleſs be ſoon extended through the body of *accoucheurs*. In order to the promoting this deſirable view, it was neceſſary to be particularly explicit on that head in my appendix: and I have accordingly enlarged on it, in ſuch manner, as to explain every argument that could give conviction of, and tend to explode ſo deep-rooted, and, at the ſame time, ſo pernicious a prejudice. But however concluſive the arguments enumerated may be, ſo ſtrong is the prepoſſeſſion againſt the doctrine I have advanced, that I eſteem it fortunate, to have, at preſent, the concurrence of all the moſt able practitioners or teachers of midwifery in London.

The treatment of women after delivery in common caſes, forms the contents of the ſeventh ſection. In this material part, Dr. Aſtruc has been very brief and ſilent, as to ſeveral particulars; which it is very neceſſary the midwives ſhould be rightly informted in: and the more, becauſe their common practice is generally very erroneous in thoſe points. As the direction of the conduct of women, both immediately after de-

delivery, and during the month of their child-bed, reſts on midwives, where no phyſician or *accoucheur* attends; which muſt be in almoſt all common caſes among the lower claſſes of people; it is extremely requiſite, they ſhould have the moſt ample inſtructions for acquitting themſelves well of it: which, as far as is conſiſtent with the brevity of an appendix, are ſupplied here for their uſe.

The *treatment of violent floodings*; *and of pains, and convulſions after delivery*; make the ſubjects of the eighth and ninth ſections. The conſideration of theſe articles was in this work, from reaſons not eaſily to be conjectured, omitted by Dr. Aſtruc; though they were certainly a very material part of his plan; as the knowledge of them is exceedingly neceſſary to midwives. Caſes of this kind, ſhould, indeed, always be left to men-practitioners, where their aid can be obtained. But theſe accidents cannot be foreſeen till they happen; and are then ſo preſſing, that the patient may be loſt before aſſiſtance, which is not immediately at hand, can be called in. It is requiſite, therefore, in many ſuch inſtances, that the midwife ſhould make ſome attempt to check the diſorder, and ſave the life of the patient; and it is ſubſerviently requiſite ſhe ſhould be, as well as poſſible, informed of the beſt means of doing it. This conſequently

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rendered the ſupplemental addition of theſe two ſections proper for the completing the appendix.

Theſe are the ſeveral additions, theoretic and practical, that have been made to this work in the appendix: where all the brevity, compatible with the advancing and demonſtrating many matters, that will appear novel to the greateſt part of the readers, has been obſerved. On this ſcore of brevity, it has been however ſpared to expatiate on ſeveral of the new anatomical lights, of which I have availed myſelf as arguments: as they are taught in the courſes of ſome or other of the moſt able of thoſe, who give lectures of anatomy, and midwifery in London. But it may be proper to remark here, that I am not ignorant of what has been obſerved, with regard to the membrane called the *Caduca*; or, of the other, which in the latter age of the *fœtus* forms the covering of the *abdomen*; and the coat of the umbilical cord. Nor am I leſs aware of what uſe I could have made of the *Caduca*, as a ground of proof, particularly with reſpect to the general adheſion of the whole of the membranes to the *uterus*, and the impropriety of the conſtant forcible delivery of the *placenta*. But as the ingenious gentleman, who

* * *

has

has been the ſuppoſed diſcoverer of this membrane, has declared to the world his intention of publiſhing an account of the gravid *uterus*, I thought it ungenteel to make any uſe of it on this occaſion, that would require ſuch an explanation, as would anticipate the novelty of a future communication of it to the world: though I might have had the pretence, of its being laid open to the public, by having been explained in his lectures of anatomy, for ſome time. I ſince underſtand, moreover, that there is another gentleman alſo, has long explained it in his courſes of midwifery; and that I might, therefore, have ſpared myſelf the delicacy, with which I have acted in this point, if I had been ſooner informed of that fact.

Before I conclude, it may be proper to aſſign a reaſon for not omitting ſome parts of Dr. Aſtruc's work, that do not reſpect the conduct of midwives in general here, where they may be ſuppoſed to be Proteſtants. Theſe are, the inſtructions for baptizing children; and the adminiſtring the ſacrament to women in danger; with ſome other paſſages relative to the uſages of the church of Rome. But ſome of theſe matters were ſo interwoven with the other contents, that they could not be well ſeparated

parated from them, without mutilating the work, in a manner which is ſcarcely allowable in tranſlations: and, therefore, theſe, which could not well have been taken away, rendered the continuance of the reſt neceſſary, as they ſometimes referred to them, ſo as to have produced a perplexity from ſuch an omiſſion.

TABLE

TABLE

OF

CONTENTS.

SUMMARY history of the art of delivery.

BOOK I.

Of the knowledge previous to the art of midwifery.

CHAP. I.

Of the bones which form the baſon, Page 1.

CHAP. II.

Of the uterus, *and its different poſitions,* 9

CHAP. III.

Of the coverings of the fœtus, *or* after-birth; *the poſition of the* after-birth *in the* uterus; *and that of the* fœtus *in the* after-birth, 16

CHAP. IV.

Of the examination of the parts before delivery; commonly called touching, 24

CHAP. V.

Of the changes, which happen to the ſituation of the child; and the ſtate of the uterus *at the approach of labour,* 32

CHAP. VI.

Of the preparations neceſſary for delivery, 37

BOOK

BOOK II.

Of natural deliveries, where the child preſents itſelf in a right poſition.

CHAP. I.

Of the natural deliveries, that are of the firſt kind; where the child preſents itſelf with the head foremoſt, 41

CHAP. II.

Of the labour of the ſecond kind; where the child preſents itſelf by the feet, 51

CHAP. III.

Compariſon of the delivery which is made by the head, with that by the feet, 60

CHAP. IV.

Of the method of managing women lately delivered, 67

CHAP. V.

The conduct, which muſt be obſerved, with regard to new-born children, 77

BOOK III.

Of deliveries, that are not natural.

CHAP. I.

Of the labours, where the children preſent themſelves by the head; but in a poſture which makes an obſtacle to their paſſing out, 81

CASE I. *When the child preſents the head and body obliquely to the* vagina, 82

CASE II. *When the child preſents the head, with one or both the hands,*

CASE III. *When the child preſents itſelf with the face upwards, turned towards the bones of the* pubes, 86

CHAP. II.

Of the labours, where the child preſents itſelf by the feet; but in poſitions which render the paſſing out impoſſible, or difficult, 88

CASE I. *When the child presents the feet obliquely to the entrance of the orifice of the* uterus, 89

CASE II. *When the child presents only one foot, or one foot and one knee,* 90

CASE III. *When the child presents itself with the toes turned upwards, which shews the face is turned the same way,* 92

CHAP. III.

Of labours, where the child presents itself by the hands, elbows, or shoulders, 94

CASE I. *When the child presents itself by the hands,* ibid.

CASE II. *When the child presents itself by the elbows,* 95

CASE III. *When the child presents itself by the shoulders,* 96

CHAP. IV.

Of the deliveries, where the child presents itself by the knees, or the back, 98

CASE I. *When the child presents itself by the knees,* ibid.

CASE II. *When the child presents itself by the back,* 101

CHAP. V.

Of the deliveries, where the child presents itself by the back, 102

CHAP. VI.

Of the deliveries, where the child presents itself by the belly, 105

BOOK IV.

Of deliveries, that are hard and difficult.

CHAP. I.

Of the difficult and hard labours which proceed from the mother, 108

CASE I. *Of the difficulty which comes from the obliquity of the* uterus, ibid.

CASE II. *Of the difficulty, which proceeds from the weakness, or passiveness of the* uterus, 112

CASE III.

CASE III. *Of the difficulty, which proceeds from the orifice of the* uterus, 113
CASE IV. *Of the faults, which proceed from the* vagina, 115
CASE V. *Of the difficulty, which proceeds from the baſon,* 117
CASE VI. *Of the difficulty, which proceeds from the* coccyx *in particular,* 122

CHAP. II.

Of hard and difficult labours, which proceed from the child, 123
CASE I. *Of the difficulty, which comes from the child's head being too big,* 124
CASE II. *Of the difficulty, which proceeds from the child's being dropſical,* 127
CASE III. *Of the difficulty, which comes from the child's being of a monſtrous form,* 130
CASE IV. *Of the difficulty, which proceeds from there being two children in the* uterus, 132

CHAP. III.

Of hard and difficult labours, which proceed from the after-birth, 134
CASE I. *Of the difficulty, which proceeds from the* placenta's *preſenting itſelf firſt in the paſſage,* ibid.
CASE II. *Of the difficulty which there is, to deliver the woman, when the after-birth, inſtead of coming out after the child, remains in the* uterus, 137
CASE III. *Of the difficulty, which proceeds from the umbilical cord's coming out before the child,* 140
CASE IV. *Of the difficulty, which comes from the coverings,* 142

CHAP. IV.

Of hard and difficult labours, from cauſes merely accidental, 143
CASE I. *Of the difficulty, which proceeds from abortion,* ibid.

ARTICLE I.

How a midwife ought to conduct herſelf in the caſe of a pregnant woman, where there is a danger of a miſcarriage, but not ſuch as is certain, 144

A R-

ARTICLE II.

What it is proper the midwife ſhould do, when the abortion is confirmed; or that, without being ſo, the accidents continue, though leſs ſtrongly, and with a conſtant diſcharge of blood, 146

ARTICLE III.

How a midwife is to act, when called to a perſon who has procured abortion by her own means, 152

CASE II. *Of the difficulty, which proceeds from the child's being dead,* 156

ARTICLE I.

Of the extraction of a dead child, ibid.

ARTICLE II.

Of the extraction of the head of the child remaining in the uterus, 161

CASE III. *Of the difficulty in extracting a mole,* 167

BOOK V.

Of the bad accidents, which ſometimes happen in deliveries. 175

CHAP. I.

Of the falling down, or deſcenſus *of the* uterus, ibid.

CHAP. II.

Of the reverſing or inverſion of the uterus, 179

CHAP. III.

Of the convulſive motions of the uterus *in delivery,* 182

CHAP. IV.

Of the rupture of the uterus, 187

CHAP. V.

Of the rupture of the perinæum, *or* ſeptum, *which ſeparates the* vulva *from the* anus, 190

CHAP. VI.

Of the Cæſarean *operation,* 193

ARTICLE I.

Of the manner of performing the Cæſarean *operation,* 194

ARTICLE II.

Obſervations on theſe operations, 198

CHAP.

CHAP. VII.

Important observations on the duties of midwives, in the exercise of their professions, 210

ARTICLE I.

Of the conduct that midwives ought to pursue, in the clandestine deliveries that are made with them, ibid.

ARTICLE II.

What care the midwife should take, that baptism be conferred on children, who are in danger of dying, 213

Decisions of the Doctors of the Sorbonne, on the validity of baptism conferred on children by injection, 216

Answer to a letter of Mr. D. B. F. on the conduct of Adam and Eve, with regard to their first children, 221

I. SOLUTION, 222
II. SOLUTION, 223
III. SOLUTION, 224
IV. SOLUTION, 228
V. SOLUTION, 231

APPENDIX. I.

Forms of the remedies directed in this work; as they are found in the Parisian Pharmacopœia, 233

APPENDIX. II.

Containing illustrative remarks on conception and pregnancy; and on those particulars in the practice tanght by Dr. Astruc, which vary from the methods adopted by the best accoucheurs *here,* 239

CHAP. I.

Illustrative remarks on conception and pregnancy, 239

SECT. I. *On the existence and form of the* animalcula in semine, *ibid.*

SECT. II. *Of the adhesion of the* placenta *and* chorion *to the* uterus, 247

SECT. III. *Of the natural reversed position of the child in the* uterus; *and the error of the supposed* culbute, *or turning, before delivery, in order to account for the*

the head's being generally downwards at that time, 251

SECT. IV. *Observations on the means, by which the* fœtus *receives its nouriſhment; and on the queſtion, Whether there be any communication of blood betwixt the mother and the* fœtus? 255

SECT. V. *Obſervations on moles, and falſe conceptions,* 280

SECT. VI. *Of the error, in imputing the pains and efforts to the* CALCITRATION, *or kicking of the child againſt the* uterus, 286

CHAP. II.

Illuſtrative remarks on thoſe particulars in the practice taught by Dr. Aſtruc, which vary from the methods adopted by the beſt accoucheurs *here,* 291

SECT. I. *Of the conduct to be obſerved in floodings during the pregnancy,* ibid.

SECT. II. *Of the conduct to be obſerved in the caſe of violent convulſions preceding labour,* 294

SECT. III. *On the poſture, in which women may be beſt delivered: and preparation neceſſary for it,* 296

SECT. IV. *On the conduct to be purſued in a natural labour, not attended with any peculiar difficulty,* 301

SECT. V. *Of the treatment of the child after delivery,* 308

SECT. VI. *Of the conduct to be obſerved, when the* placenta, *and membranes, or any part of them, remain after the delivery of the child,* 325

SECT. VII. *Of the treatment of women after delivery, in common caſes,* 347

SECT. VIII. *Of violent floodings after delivery,* 355

SECT. IX. *Of pains and convulſions after delivery,* 361

ERRATA.

PAGE [8], line 1, for *Vatieres* read *Vallieres*. Ibid. for 1763 *read* 1663. p. [8], l. 22, for *adapting* read *adopting*. p. [21], laſt line, for *it all*, read *at all*. p. 26. l. 12, for *coccya* read *coccyx*. p. 27. l. 31, for *vagina* read *uterus*. p. 34, l. 30, for *mortifies* read *mollifies*; and l. 35, for *in* read *of*. p. 44, l. 12, for *arteries* read *efforts*. p. 47, l. 8, for *cochia* read *lochia*; and l. 15, for *plate* read *ſtate*. p. 50. l. 1. for *ſhouldets* read *ſhoulders*; and l. 25, for *cochia* read *lochia*. p. 56, l. 26, for *binding* read *bending*. p. 73, l. 12, for *auxiliary* read *axiliary*. p. 79, l. 6, for *froth* read *ſcurf*. p. 87, l. 29, for *head* read *hand*. p. 97, l. 20, for *to the remark*, read *to remark*. p. 99, l. 3, for *knees be come*, read *knees come*. p. 102, l. 14, for *orifice* read *paſſage*. p. 108, laſt line, for *ſtrait* read *ſtraight*. p. 112, l. 13, for *This a fault*, read *This is a fault*. p. 148, l. 10, for *has been* read *has not been*. p. 151, l 6, for *peſſarius* read *peſſaries*. p. 187, for *Chap. VI.* read *Chap. IV.* p. 191, l. 14, for *coccya* read *coccyx*. p. 207, l. 14, for *Calſus* read *Celſus*. p. 225, l. 5, for *Rocderer* for *Roderer*. p. 236, l. 8, for *periwincle* read *periwincle*. p. 240, l. 30, for *rother* read *rather*. p. 267, l. 11, for *viparous* read *viviparous*. p. 279, l. 7, for *reaſon* read *reaſons*. p. 283, l. 16, for *Dr. Enton* read *Dr. Exton*; and the laſt line, for *monſtruous* read *monſtrous*, p. 292, laſt line, for *idioſyneracy* read *idioſynecraſy*. p. 301. l. 29, for *dilatior* read *dilator*. p. 318, l. 19, for *apthæ* read *aphtæ*. p. 320, l. 34, for *apthæ* read *aphtæ*.

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A

SUMMARY HISTORY

OF THE

Art of Midwifery.

THE hiſtory of MIDWIFERY cannot be otherwiſe than *ſummary*, becauſe it is confined to a few facts, contained in ſome authors, where they muſt be ſought for; and whence they muſt be collected. But, however *ſummary* it may appear to be, it ought, at leaſt, to ſhow: 1ſt, Who the perſons are that have practiſed this art: 2dly, What progreſs towards perfection it has gradually made: 3dly, What the particular treatiſes are, which have been compoſed on this ſubject: and, 4thly, Who it was, that have, in a manner, ſeparated the art of midwifery from the reſt of the art of chirurgery. Theſe are, therefore, the points, which I propoſe to treat of in the following articles.

ARTICLE I.

By what Perſons the Art of Midwifery has been practiſed.

THE art of midwifery is almoſt as ancient as the world. When Eve, driven from Paradiſe, was delivered of her children, ſhe had occaſion for aſſiſtance: and Adam was the only one who could adminiſter it to her. But, as their poſterity increaſed, women mutually did this office for each other, till ſuch time, as ſome among them, having had more inclination or capacity for ſuch a function, applied themſelves more particularly to it; and became profeſſed midwives; ſuch as thoſe of our times may be.

I. The firſt midwife, of whom we muſt ſpeak under that name, is ſhe who aſſiſted at the ſecond labour of (*b*) Rachel, the wife of Jacob. This midwife, to encourage her patient, did well to tell her ſhe ſhould be delivered of a boy: for Rachael expired in the labour. Mention is alſo made, in Geneſis, of another midwife, on occaſion of the labour of (*c*) Thamar, who was delivered of twins. But the moſt favourable

(*b*) Genes, *chap.* 35. *verſ.* 16. *and the following.*
(*c*) Ibid. *chap.* 38. *verſ.* 27. *and the following.*

vourable mention of midwifes is, what we find in Exodus (*d*); where Pharoah, who reigned in Egypt, and would have deſtroyed the Hebrews, commanded the two midwifes, called Siphra and Phya, to kill all the male infants of the Hebrew women: which, nevertheleſs, they diſobeyed; and thence merited a recompence from God. It was women, likewiſe, who aſſiſted the wife of Phineas, the ſon of Heli, high-prieſt of the Hebrews (*e*), in her labour which proved ſo unhappy, in conſequence of the news of taking the ark, and the death of her huſband and father-in-law. In all theſe places, midwives bear the *feminine* name of *Mejalledeth*, in the Hebrew language.

II. Among the Greeks, it was, in like manner, women who officiated in deliveries. Phanarete, the mother of Socrates, was a midwife. Plato ſpeaks largely (*f*) of midwifes; explains their functions; regulates their duties; and remarks, that they had, at Athens, the right to propoſe and ſettle marriages. Hippocrates (*g*) takes notice of midwifes (*h*): as do alſo Ariſtotle

(*d*) Chap. 1. *verſ.* 15. *and the following.*
(*e*) 1. of Kings, *Chap.* 4. *verſ.* 19. *and the following.*
(*f*) In theæteto. (*g*) De morbis mulierum. *libr.* 1. *parti.* 76 *and* 93. *juxta editionem Lindenii.* (*h*) Hiſtor. Animal. *libr.* vii. *c.* 10.

(*i*), Galen, and Ætius (*k*). The laſt even frequently quotes a woman named Aſpaſia; who was, in all appearance, a midwife.

Moſchien, likewiſe, a Greek author, in fact, but leſs antient, as I believe, often mentions them: they were called, among the Greeks Μαῖαι Ιατρομαῖαι, that is to ſay, as is thought, *mamma*, and *grand-mamma*.

III. We are more acquainted with the hiſtory of the Romans: and it is known, that among them, none but midwifes were concerned in deliveries. The comedies of Terence and Plautus, alone, furniſh ample proof of it. We find there, that it is always midwifes who are called to ſuccour women in labour. Moreover, Pliny ſpeaks more than once, in his natural hiſtory, of midwifes, and their functions; and names two (*l*), Statira, and Salpa (*m*), who had, as it ſeems, great reputation. To conclude, there is found in Grater (*n*), Reinceſius, and Gaſpar Bartholin (*o*), many ſepulchral inſcriptions, where mention is made of midwifes, who are named there; and whoſe names are always ſpelt with *p*, *opſte-*

(*i*) *In Aphor. Comment.* V. Aphor 51, and 62. *De natural facult.* libr. iii. cap. 3. (*k*) Tetrabibl. IV. *Serm.* IV. *cap.* 22. (*l*) *Libr.* XXVIII. *cap.* 7. (*m*) *Libr.* XXVII. *cap.* 10. (*n*) Epiſtol. 35. ad *Rupert.* (*o*) In Expoſitione veteris in puerperioritus, pag. 37 and 38.

triſe:

triſe: which ſeems to prove, that this name came from *ops*, for *opis*, and *ſto*, for *præſto*: ſignifying, *a woman who gives ſuccour*.

IV. The ſame uſage prevailed at the fall of the empire. Ammianus Macellinus, aſſures us, that, Euſebia, wife of the emperor Conſtantius, ſon of Conſtantine the Great, being jealous on account of the partiality of Hebena, ſiſter of her huſband, and wife of Julian, known by the name of Apoſtate, ſeduced the midwife, who was to deliver her in Gaul, where her huſband commanded; and engaged the women to kill the child of which Julian's wife ſhould be brought to bed, by cutting the navel, that is to ſay, the umbilical cord, too ſhort, "*præfecto plùs quàm convenerat umbilico*," ſays that author.

We may ſubjoin to thoſe times, altho' he is much leſs antient, a phyſician, whoſe works, divided into three books, have been publiſhed under different names, of which, I believe, the true one is Theodoſius Priſcian. He appears to me, to have lived towards the eighth century. Of the three books which compoſe his works, he addreſſes the third, intitled *Gynæcea ad Salvinam*, according to the Baſil edition, or *ad Victoriam*, according to that of Straſbourg: but this has little relation to the ſubject we are treating of; as it appears by the words of Priſcian himſelf, that it was to a midwife

the book was addreſſed. Moreover, a woman called Trotula, who lived in the thirteenth century, and whom, I believe to have been a midwife, as is, indeed, apparent from the work itſelf, compoſed a book which muſt be conſidered as the firſt treatiſe expreſly written on midwifery.

It is certain, that, ſince this time, known and civilized countries, have admitted midwifes, or women, only to aſſiſt their ſex in labours. We have already ſhewn it as to the Jews, Greeks, and Romans, from the feminine names that have been given to theſe perſons, which clearly denote their ſex: and we may conclude it in the ſame manner, and with equal reaſon, as to the weſtern countries of Europe.

The perſon who aſſiſt women in labour, who facilitate delivery, and who receive the children at their birth, are called, in Spain, *Comadré*, or *Parera*; in Italian, *Comari*, or *Levatricé*; in France, *Matrones*, or *Sages-femmes*; in Engliſh, *Midwifes*; and in German, *Hebammen*, *de Heben lever*. In Low Britanny, where the antient Celtic language ſubſiſts, they give them the name of *Mamdiegues*; that is to ſay, as ſome pretend, *Mamma Menageres*. All theſe names, which are feminine, afford a proof, that women only were employed in this office.

It muſt be allowed, nevertheleſs, that there were, in theſe times, eſpecially in great towns, ſurgeons who applied themſelves to the art of delivery; and who made a particular ſtudy of it. They were called in when difficult caſes occurred, where midwives found their abilities not adequate; as when the child lay acroſs the *uterus*, and could not be put right; when it was dropſical, or of a monſtrous form: when it was dead; when the body of it was drawn out, and the head remained in the uterus; when there was ſome fault of conformation in the parts of the woman in labour, &c. Then the ſurgeon attempted, by his manual dexterity, to deliver the woman; or had recourſe to inſtruments uſeful in ſuch caſes; as *crochets*, *crows-bills*, and others, which are found enumerated in Ambroſe Parè, after Albuſaſis. But as theſe caſes were very rare, the midwives maintained their prerogative of delivering women. It is certain, at leaſt, that Maria Thereſa, of Auſtria, wife of Lewis the Fourteenth, never employed any but women in her labours: and it may be juſtly inferred, that her example influenced the conduct of the princeſſes and ladies of her court; and, by degrees, of all the women of the city. I have good aſſurances that the epocha of the employment of ſurgeons does not go further back, than the

firſt labour of Madam de Vatieres, in 1763. As ſhe was deſirous of the greateſt ſecrecy, ſhe ſent for Julian Clement, a ſurgeon of reputation. He was conducted to her in the moſt private manner, to a houſe, where ſhe had her face covered with gauze; and it is ſaid, the king was wrapt up in the curtains of the bed, which concealed him. She was thus ſafely delivered of a boy, at Paris, the 27th of December, 1683; who was called Lewis de Bourbon; and died the 15th of July, without having been legitimated.

Clement was employed in other labours of the ſame lady, that were not kept ſo ſecret, with the ſame ſucceſs; which procured him reputation; and occaſioned a diſpoſition in the princeſſes to make uſe of ſurgeons in their labours. As this brought the practice into faſhion, the name of *accoucheurs*, to ſignify this claſs of ſurgeons, was introduced. Foreign countries were not long behind in adapting this cuſtom, and in ſo doing, they adopted alſo, the * name, although it was not according to the genius of their languages. In England, indeed, they have *(till lately)* choſen to call them men-midwives.

* The profeſſors of the art of delivering women in labour, which the French call *accoucheurs*, has been, till of late, vulgarly called men-midwives, in Engliſh. But at preſent the French name begins to be adopted here, as well as elſewhere, and to become technical; on which account I ſhall uſe it in the ſequel of this treatiſe.

I am well aware, that, in order to overturn what I have advanced, the authority of Hyginus, of whom there is a treatiſe of *fables*, may be oppoſed to me. In this work, the author ſays, *fab.* 274. "That the "ancients had no midwives; on which ac- "count, the women choſe rather from mo- "deſty, to run the riſque of dying, than "to have the ſhame of being aſſiſted by "men. For the Athenians," adds he, "had forbid women and ſlaves to learn "medicine; that is to ſay, the art of mid- "wifery. A young girl, whom he calls "Agnodice, deſiring to learn this art, cut "off her hair, put on a man's dreſs, and "entered herſelf in the liſt of ſcholars of "one Hierophilus;" *whom we muſt not confound with the famous Hirophilus that lived ſome little time after Hippocrates, as ſeveral others have done.* "She applied "herſelf at laſt, to aſſiſt the women in "their labours; who at firſt refuſed her "offers, believing her to be a man; but "they afterwards accepted them with joy, "when ſhe had convinced them ſhe was a "girl.

"The phyſicians," continues the author, "that is to ſay, the *accoucheurs*, finding "they were no longer employed, accuſed "Agnodice of being an eunuch, as ſhe ap- "peared, on account of her having no "beard, *glabrum eſſe*; and of ſeducing the

"women.

" women. On which, the *areopagus* " being aſſembled, condemned her; al- " though Agnodice gave them proofs ſhe " was a woman; but the women of the " greateſt diſtinction, coming to her de- " fence, the judges revoked the ſentence, " abrogated the law, and permitted wo- " men to learn the art of medicine; that is " to ſay, the art of midwifery."

But I muſt deſire thoſe, who would avail themſelves of the authority of Hyginus, to begin by reading his works. They cannot certainly attribute it to C. J. Hyginus, freeman of the emperor Auguſtus, the friend of Ovid, and a learned grammarian, who lived in the time of the moſt pure Latinity, and whom (*p*) Suetonius has praiſed: whereas the treatiſe on fables, of which we are ſpeaking, is full of ſoleciſms and barbariſms; and muſt be the work of an author who lived in the times when the Latin language was corrupted; that is to ſay, towards the ſeventh or eighth century; as is thought by Reineſius (*q*), Voſſius (*r*), and Muncherus (*s*), to whom we owe an edition of this work. The contradictions which are found in this book, give room to ſuſ-

(*p*) De illuſtribus grammaticis. (*q*) Variarum Lection. Libro. III. (*r*) *De Scientiis mathematicis, pag.* 170. *et de vitiis ſermonis, Lib.* III. *Cap.* 12. (*s*) In diſſertat. operi præfixiâ.

pect,

pect, that it is not the work of one hand only; and that ſeveral have been concerned in it. What credit can be given to ſuch a compilement, or rather rhapſody, with regard to antient facts, advanced without proofs, at the ſame time they are deſtroyed by the expreſs teſtimony of the authors, whom we have quoted, who aſſert, that among the Greeks, the care of women in labour was intruſted to women only.

ARTICLE II.

By what Degrees the Art of Midwifery was brought to Perfection.

TO GIVE MORE PERFECTION TO AN ART, is to find the means of exerciſing it more eaſily, and to attain to the performance of finer or better works. It is ſo in the art of midwifery. This art has been rendered more perfect, by inventing new methods of practice, adapted to make the labours more eaſy and more ſafe. Theſe new methods we ſhall below explain according to their order.

1. The practice of tying the umbelical cord, or navel-ſtring, and of cutting it off below the ligature, or place where it is tied, is eſſential to the art of midwifery: and

and I believe we may carry it back as far as Eve. It is conſidered as abſolutely neceſſary for the preſervation of the child: which notion favours a little of prejudice, as we ſhall ſee in a diſſertation at the end of this work. But it is certain, that it is a practice generally received in all nations: for which reaſon, the midwives had among the Greeks, the name of ομφαλοτόμοι *umbiliſecæ*; that is to ſay, cutters off of the navel, or navel-ſtring. Nevertheleſs, the prophet Ezekiel (*t*), is the firſt author who has made mention of it. It is true, that Ezekiel lived towards the year of the world 3360, about ſix hundred years before Jeſus Chriſt; and that he is conſequently much more ancient than Hippocrates. This prophet ſpeaks of it only occaſionally, when, deſiring to ſhow the ingratitude of Jeruſalem towards God, he compares the miſerable ſtate, in which it was when God took it under his protection, to that of a newly born child which is going to be expoſed, and where it has even been neglected to cut the navel-ſtring; *cui in die ortûs ſui non eſt præciſus umbilicus.*

The art of midwifery had made a very ſmall progreſs toward perfection in the time of Hippocrates; and Hippocrates himſelf did not much advance it. Among the

(*t*) Cap. 16. vers. 4. 5. 6.

works,

works, which remain of him, there are three wherein he ſpeaks of midwifery; viz. in *De naturâ pueri*; the books *De morbis mulierum*; and the little treatiſe, *De exſectione fœtûs mortui*. In theſe works, ſuppoſing them to be his, which is a matter of ſome doubt as to the treatiſe on the diſeaſes of women, he does not allow any delivery to be natural, except that where the head comes firſt. He condemns that made by the feet, as fatal both to the mother and child (*u*). "*Quod ſi in latus aut pedes prodeat*, (puer) "*id enim ſæpius contingit,---difficilem partum mulier ſentiet, Jam verò ex his plurimæ vel ipſi fœtus, vel una etiam cum ſuis matres pueri.*" He ſays (*x*), moreover, "*Grave eſt, ſi in pedes proceſſerit, et ſæpe aut matres pereunt, aut pueri, et ambo.*" He is for having the children returned, which preſent themſelves with the feet forwards, in order to give them a contrary ſituation (*y*). "*At verò ſi brachium, aut crus, aut utrumque vivi fœtus foràs emittunt, eos oportet ſimul ac de exitu ſignificationem fecerint, priùs commemorato modo introretrudere, in caput obvertere, et in viam adducere.*" He orders for that purpoſe to roll the woman in the bed, to ſhake her, and to make her jump (*z*). "*Concuſſionibus utendum quas hoc*

(*u*) De naturâ pueri. (*x*) Lib. I. de morbis mulierum, *Art.* 4. (*y*) Ibidem. (*z*) Ibidem.

"*modo*

" *modo parare poteris, &c.*" He propoſes the ſame expedients to procure the coming forth of the infant. (*a*) " *Concutere autem* " *hoc modo oportet, &c.*" And, if they do not ſucceed, he adviſes (*b*) to extract them by crotchets; and if that fail, to cut them in pieces. From whence it may be well concluded, that if it be true, Hippocrates is the father of medicine, he is at leaſt not ſo of the art of midwifery.

We have no knowledge of what the phyſicians, who lived from the time of Hippocrates to that of Celſus, a cotemporary of the emperor Tiberius, thought of this art; becauſe if they did write on the ſubject, their works are not come down to us. But there is found in Celſus (*c*), although, according to appearances, he did not practiſe phyſic, two reflexions very conducive to the improvement of midwifery.

The firſt is, on the manner of opening and dilating the *uterus*. " The firſt finger " (ſays he), being well greaſed, muſt be " put into the orifice when it opens itſelf: " the ſecond muſt be afterwards thruſt in, " under the ſame circumſtances; and the " ſame with regard to the reſt, till the " whole are introduced. They muſt be " then, by ſpreading them, uſed as a *ſpe-*

(*a*) De exſectione fœtûs in utero mortui. (*b*) Ibid.
(*c*) De re medica, lib. vii. cap. 29.

" *culum*

" *culum uteri*, to dilate this orifice, and fa-
" cilitate the introduction of the hand,
" which is to act in the uterus. *Medicus*
" *unctæ manûs indicem digitum primùm debet*
" *inſerere, atque ibi continere; donec iterum*
" *id os aperiatur: Rurſuſque alterum digitum*
" *dimittere debebit, et per eaſdem occaſiones*
" *alios, donec tota eſſe intûs manus poſſit.*"
There is no great matter in this inven-
tion, but nobody had ſpoken of it before
him, and every body has made uſe of it
ſince.

The ſecond reflexion is much more im-
portant; becauſe it teaches, contrary to the
common opinion which then prevailed, that
children may be delivered ſafely and eaſily,
by the feet, without crotchets, being drawn
out by the feet. " *In pedes quoque conver-*
" *ſus infans non difficulter extrahitur, qui-*
" *bus apprehenſis per ipſas manus commode*
" *educitur,*" In order to this, Celſus re-
quires, that care ſhould be taken to turn
the child upon the head, or upon the feet,
if it be otherwiſe placed in the *uterus*.
" *Medici propoſitum eſt, ut eum manu diri-*
" *gat, vel in caput, vel etiam in pedes, ſi*
" *fortè aliter compoſitus eſt.*" It is true,
that Celſus ſpeaks only of a *dead child* in
the *uterus*; but it is eaſy to conclude, that
the ſame practice may be ſucceſsfully em-
ployed in the caſe of a living one.

This

This was not, however, done; notwithſtanding the authority of Celſus: for the ancient prejudice prevailed for a long time after. Pliny, who lived under the emperors Veſpaſian and Titus, was not, in fact, himſelf, a phyſician; but, in condemning the delivery by the feet, he evinces the opinion of the phyſicians of his age. For he affirms * it as a known fact, "that a *delivery by the feet* was "an unnatural method." He adds, "that "they called the children, which were "born in this manner, *Agrippas*; as im-"porting that they were born with much "pain. *In pedes procedere naſcentem, contrà "naturam eſt, quo argumento eos appellavere "Agrippas, ut ægrè partos.*" It would be endleſs to enumerate the phyſicians, who have thought the ſame; it is enough to quote the principal; as Galen (*d*), Galeatius (*e*) de Sancta Sophia, Barnard (*f*) de Gordon, Encharius Rhodion (*g*), Mercurialis (*h*), Mercatus (*i*), James Rueſt (*k*), Liebant (*l*), Lazarus Pé (*m*), Varundus (*n*), Perduleis (*o*), and many others.

* Hiſtor. natur. lib. VII. cap. 8. (*d*) Libro XV. *De uſu partium*, cap. 7. (*e*) Commentar. *in nonum rhaſis*, fol. 82, verſo. (*f*) Philon. *Particul.* VII. cap. 16. (*g*) De partu hominis, cap. 3. (*h*) De morbis mulieribus, lib. II. cap. 2. (*i*) De mulier. affectib. lib. IV. cap. 3. (*k*) De mulieribus, lib. III. cap. 2. (*l*) Des maladies des femmes, livr. III. chap. 46. (*m*) Ibid. liv. III. cap. 48. (*n*) De affect. muliebrum. lib. II. cap. 8. (*o*) Univerſ. Medicin. lib. XIII. cap. 14.

Never-

Nevertheleſs, however common this opinion might be, it was never univerſal; and many phyſicians have been educated, who, without ſuffering themſelves to be led away by vulgar prejudices, or ſeduced by the authority of Hippocrates and Galen, have praiſed and approved of delivery by the feet. Such are Aetius (*p*), Paul d'Egina (*q*), Moſchim (*r*), Avicenna (*s*), Serapion (*t*), Albucaſis (*u*), Valeſcus de Taranta (*x*), Des Roches (*y*), Alexander Benoits (*z*), Ambroſe Parè (*a*), and Marinello (*b*); who all commended and approved delivery by the feet, when the child preſented itſelf in that poſture: and ſome of them adviſed, to reduce the child to that poſition whenever it preſented itſelf badly.

This queſtion was, therefore, a long time undecided; and it is no wonder, ſince it is difficult to deſtroy an old prejudice, ſtrongly rooted. Riverius, a phyſician of reputation (*c*), even in 1651, condemned the delivery by the feet; and Mauriceau (*d*) re-

(*p*) Tetrabibl. IV. *Serm.* IV. *cap.* 22. (*q*) De re medicâ, *lib.* III. *cap.* 76. (*r*) In collect. Spachii, *pag.* 10. *No.* 5. (*s*) Canon. *Fen.* 21. *Tract.* V. *cap.* 20. (*t*) Breviarii Tract. V. cap. 35. (*u*) Chirurg. *parte ſecundâ*, *cap.* 75. (*x*) Philonii, *lib.* V. *cap.* 20. *In declaratione.* (*y*) De morbis muliebribus curandis, *cap.* 27. (*z*) Operum, *lib.* XXIV. *cap.* 36. (*a*) Œuvres *lib.* XXIV. *de la génération, chap.* 15 & 33. (*b*) Le medicine parturienti alle infirmita delle donne, *libro terzo, cap.* 11 & 76. (*c*) Praxes medicæ, *lib.* XV. *cap.* 18. (*d*) Maladies des femmes groſſes, *livre* II. *chap.* 14.

marks, in the first edition *des maladies des femmes grosses*, in 1664, "*That several physicians were yet of opinion, that, when the child presented the feet, it should be returned, in order to make the head come first.*" But after having declared it to be difficult, not to say impossible, to execute this direction, he concludes, "*that it is much better to draw out the child by the feet, when it presents them, than to run the hazard of worse consequences, by returning it.*"

Reason has prevailed at last; and at present all the world agree as to this point. It is allowed, that not only the child should not be turned on its head, when it presents its feet; but that it is, on the contrary, on the feet, it should be turned, in almost all the bad situations in which it may be found in the *uterus*. This practice is now considered as a fundamental rule in the art of midwifery; and it has contributed much towards the perfection of it, by furnishing the easy means of performing deliveries, that were formerly both very difficult and laborious, and often fatal to the child. What has been said on this subject, may be seen (*e*) in the comparison between the delivery by the head, and that by the feet. If the old prejudice, with respect to this matter, subsists any where yet, it is only in

(*e*) Maladies des femmes grosses, livre II. *chap.* 3.

some

ſome corner of a province, whither truth has not been yet able to make her way.

III. Floodings of uterine blood often happen in pregnant women; but of different kinds, and from different cauſes. Some only come from the *vagina*; or, if they come from the *uterus*, it is only from particular places, where the *placenta* does not adhere to it; and, conſequently, do not affect the pregnancy, or but in a ſmall degree.

This kind of flooding gives way eaſily to bleeding, to the keeping carefully in bed, to anodyne clyſters; and more particularly to aſtringent remedies, uſed with diſcretion. What has been ſaid on this kind of flooding, may be ſeen in the *treatiſe on the diſeaſes of women*, *book* I. *chap.* ix. *caſe* 2.

It is not the ſame with reſpect to another kind of flooding, which proceeds from a corner of the *placenta* having been ſeparated from the *uterus*, by the effect of a fall; a falſe ſtep; a contuſion, or violent preſſure on the belly; or ſome blow that has been received on it; too loud ſcreaming; a great ſhake; vomiting; cholic; a ſtrain; a violent cough; *&c.* In this caſe, the veinous *appendices* of the *uterus*, which were joined to the part of the *placenta* that is ſeparated, being no longer united with it, bleed into the *uterus* continually; becauſe the *placenta* cannot again unite with it, nor yet

can the veinous *appendices* close themselves, so long as the *uterus* remains distended from its containing the child.

When this accident happens in the beginning of pregnancy, from the first month to the fifth, abortion soon follows; because the *placenta*, adhering but weakly at that time, is easily separated, and goes out with the child; and, consequently, the *uterus*, being no longer full, contracts; the veinous *appendices* grow less and close, and the flooding ceases.

The mischief is much greater when the pregnancy is more advanced, as from the sixth to the ninth month, and especially in the eighth or ninth; as, at that time, the *placenta*, adhering strongly to the *uterus*, seldom separates entirely from it; and it becomes still more impossible they should reunite with each other: for which reason, there is no abortion to be hoped for, in that case, which can remedy the evil. The flooding, therefore, continues still more strongly: as the *uterus*, distended by the volume of the child, keeps the, *appendices* always dilated, and hinders them from contracting. But however continual this flooding may be, it suffers variations: for sometimes it is stronger, when the flow of spirits, or the uneasinesses of the patient, the bad nights, the too rich nourishment, or some accidental fever, increase it; and some-

ſometimes leſs, when quiet ſleep, ſimple and ſlender nouriſhment, perfect reſt of the body and mind, bleeding, or ſome aſtringent remedies adminiſtered properly, moderate it. In ſpite of theſe variations, nevertheleſs, as it is continual, it throws at length both the mother and child into a weak ſtate, that ought to be dreaded. In vain are bleedings repeated; in vain are remedies, the moſt celebrated in theſe caſes, employed; the diſeaſe ſtill prevails over all means of relief.

One would think, that if a juſt idea had been formed of the cauſe of this evil, it would have naturally occurred, that, in order to cure it, the child, which occaſions it, ſhould be brought away. But no body thought of it; or, at leaſt, I do not remember to have read any thing of it in the ancient authors. It is to a lucky chance, we owe the remedy for this obſtinate flooding; and it is not the firſt inſtance, where chance has given uſeful lights to medicine. This remedy conſiſts, as may be well conjectured, in quickly delivering the woman, although ſhe may not be at her time. By this means the *uterus*, being freed from the child, contracts itſelf; the veinous *appendices* grow leſs and narrow; the blood flows more ſparingly, and, after ſome time, ceaſes to be diſcharged it all, and the patient is cured.

It was a midwife, whoſe real name was *Louiſa Bourgeois*, (midwife to Mary de Medicis, wife of Henry IV.) but commonly called *Bourgier*, to whom this lucky chance offered itſelf; and ſhe had the genius to take advantage of it. She compoſed a little *treatiſe on barrenneſs, abortion, fertility, delivery, and the diſeaſes of women, printed* at Paris, *in duodecimo, in the year* 1609; wherein ſhe relates the matter with ſuch ingenious ſimplicity, that ſhe merits we ſhould hear her.

(*f*) " When a woman (ſays ſhe) has an " immoderate flooding in her pregnancy, in " conſequence of which ſhe grows very " weak, recourſe muſt be had to the ex- " traction of the child by the hand. I had " it performed, by conſent, and in the pre- " ſence of the late M. le Febvre, a phy- " ſician, and Meſſrs. le Moine and de L'iſle, " very learned phyſicians alſo; becauſe I " had ſeen, that theſe floodings are ſoon the " cauſe of the death both of the mother " and the child. This was done in the " caſe of the wife of a counſellor of the " court of parliament, who was in the " ſixth month of her pregnancy: the child " lived two days, and the mother has had " ſeveral children ſince. The phyſicians " acknowledged, that if it had been de- " ferred one hour longer, the mother and

(*f*) Chapter V.

" the

" the child would both have been dead. " M. le Febvre gave an account of this " operation in the phyſic ſchool, and ſays, " that, in ſuch a caſe, he adviſes thoſe who " aſſiſt to proceed in the ſame manner; as " he had ſeen many good women die, for " want of its having been done.

" Of floodings, of the ſame kind with " thoſe I have mentioned, (*ſays Bourgier a* " *a little lower*) died the late Mademoiſelle " d'Aubray, wife of M. d'Aubray, provoſt " of the merchants; as alſo Madam the " ducheſs of Montbazon, and many others.

" Knowing that the flux of blood is only " ſupported by the pregnancy, and having " ſeen that it ceaſed as ſoon as the woman " was delivered, I ſet on foot this practice; " which I am ſorry not to have known " ſooner, for the ſake of ſaving thoſe whom " I have mentioned above."

The kind of delivery, which muſt be performed on theſe occaſions, is deſcribed in the body of this work (g). The midwife, after having well greaſed ſeveral times the *vagina*, and the orifice of the *uterus*, muſt introduce her right hand well greaſed likewiſe; and endeavour to dilate the orifice of the *uterus*, by introducing the fore finger and thumb, one after another, and uſing them as a *ſpeculum uteri*: the dilatation

(g) Livre IV. chap. 4. art. 2.

muſt be continued gradually, till the hand can enter the cavity of the *uterus*. Then the coats muſt be torn, the child turned on its feet, and the delivery made that way. If the *placenta* be ſeparated, and come away afterwards with the child, the delivery is completed; and there remains nothing more to be done, than to put the patient to bed. But if the *placenta* adhere ſtill to the *uterus*, after having made two ligatures on the cord, it muſt be cut betwixt them; the child given to an intelligent perſon to take care of it, and an attempt made to draw out the *placenta*, which will be eaſily enough performed; becauſe the ſide that is already ſeparated gives a hold, which may be made uſe of with great advantage. After having put the delivered woman in bed, the ſtate of the child may be examined; and if it be judged to be in danger, it ſhould be chriſtened immediately. It would, indeed, be well, to baptize it in the womb of the mother before delivery; for there is a hazard of its periſhing during the operation.

It would be in vain to diſſemble, that ſuch a forced delivery would not be very painful, and often even fatal. But when it is practiſed in the laſt months of pregnancy, which is common enough, the pain and danger are not ſo great, as in a leſs advanced time. On one hand, the *uterus* has

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then acquired its full extenſion; and in ſuch caſe, its orifice is dilated ſo much the more eaſily. And, on the other hand, the flooding which has preceded, by emptying the veſſels of the *uterus*, has rendered the membranes thinner, more lax, and more diſtenſible; which occaſions the orifice to yield more eaſily to the dilatation. The flooding that has preceded, procures another advantage alſo; which is, that it ſecures the *uterus* from the inflammation, to which it would be otherwiſe expoſed. This ought not, however, to prevent the patient's being let blood in the arm, if the fever, that enſues, ſhow any reaſon for it.

After all, however painful this kind of delivery may be, or whatever danger may accompany it, there is a neceſſity to make uſe of it in ſuch a conjuncture; where, if it be neglected, the death both of the mother and the child are inevitable: and it is, moreover, a meaſure, now univerſally purſued in ſuch caſes. Although this practice properly regards only pregnancy, yet, as it relates very materially alſo to delivery, it muſt be accounted the third ſtep towards perfection in the art of midwifery.

IV. The uſe of crochets, *uncini*, to draw out children when they are dead in their mother's womb, muſt have been eſtabliſhed before Hippocrates; becauſe he ſpeaks of it

it (*h*), as of a received cuſtom. But, in Celſus (*i*), a circumſtantial detail is ſeen of their uſe to extract dead children; and of the danger which there was, that the crochet, eſcaping from its hold on the child, as ſometimes happens, ſhould tear the orifice of the *uterus*, and put the woman in labour into the greateſt danger. "*Tum, ſi* "*caput proximum eſt,*" ſays he, "*demitti* "*debet uncus undique lævis, acuminis brevis,* "*qui vel oculo, vel auri, vel ori, interdùm* "*etiam fronti rectè injicitur, deinde attractus* "*infantem educit. Attamen----ore vulvæ* "*non emittente eum, infans abrumpitur, et* "*unci acumen in ipſum os vulvæ delabitur,* "*ſequiturque nervorum diſtenſio, et ingens pe-* "*riculum mortis.*"

The phyſicians, who have written ſince Celſus, have adviſed the ſame practice in this caſe; tho' they are all convinced of the danger of which Celſus informs them; and many have even propoſed to uſe two crochets, one on each ſide, to extract the child in a more direct poſition; which, as we have ſeen, muſt of courſe greatly augment the danger. But they even are not content with ſimple crochets: Rueff has invented a *bec de canard* (or duck's bill) and pincers; and Ambroſe Paré an inſtrument, which he calls

(*h*) Libro I. *De morbis mulierum, parte* 96. Edit. Lindenianæ. (*i*) De re medicâ, *lib.* VII. *cap.* 29.

pied

pied de griphon, (a griffin's foot :) but I believe they have invented them, only to adorn their works with prints of the inſtruments; for it appears to me impoſſible, that any uſe ſhould ever be made of them.

The art of midwifery was in this ſtate at the end of the laſt age, as to extraction of the dead child, a mole, or a head remaining in the *uterus*. But, about that time, they began to propoſe a kind of pincers of a new form; to which they thought fit to retain the Latin name of *forceps*, to diſtinguiſh them from ordinary pincers, with which they had indeed nothing in common. The moſt earneſt application was every where given, to render this inſtrument perfect; and the Engliſh, Dutch, and French, produced, as in emulation, different ſorts: all which had their utility; and all, likewiſe, their defects.

I have examined the conſtruction of almoſt all of them; and it appears to me, that the kind, which Mr. Levret propoſed in his *obſervations ſur les cauſes, et les accidents de pluſieurs accouchments laborieux*, is the beſt, and the ſafeſt.

I ſhall not tranſcribe the account of the conſtruction, nor the manner of uſing it; becauſe I wiſh to have every body read Mr. Levret's book: as they cannot do it without receiving both improvement and pleaſure. With this *forceps*, and a dexterity in the uſe

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of it, difficult deliveries may be performed: or, when required, the extraction of a dead infant, a head remaining in the *uterus*; a mole; or, what is moſt difficult, a child, whoſe head is locked between the *os ſacrum*, and the *ſymphyſis* of the *pubis*.

This is the laſt ſtep to perfection of the art of midwifery; and it was the more momentous, as it baniſhed the uſe of crochets, always terrifying, and often fatal to the patient.

ARTICLE III.

What the firſt particular Treatiſes, compoſed on the Art of Midwifery, were.

IT may be ſeen by the paſſages in antient authors, which I have referred to, or quoted in the two firſt articles, that all the ancient phyſicians who have publiſhed courſes of phyſic, have ſpoken of the art of midwifery, as belonging to the ſubject they treated of. It may even be obſerved, in the paſſage of Celſus, cited above, page 15, that this author gives the name of phyſician, to the *accoucheur*; and that he allots him the office of extracting the child, when dead in the womb of the mother. This ſhows, what is elſewhere proved from a mul-

multiplicity of reaſons, that phyſic and ſurgery were then practiſed by the ſame perſons who embraced the whole extent of the healing art: and there is no room to wonder at it. The knowledge, which they then had, regarding each of theſe parts, was confined enough, to admit of the ſame perſons learning, and practiſing all of them.

But, in conſequence of deeper reſearches into things, knowledge is increaſed. Obſervations have been made of ſo many new diſeaſes; and, with reſpect to the diſeaſes formerly known, ſo many different kinds, ſo many cauſes, ſo many different indications, and ſo many means of remedy have been diſtinguiſhed, that one perſon being no longer equal to the whole, there aroſe a neceſſity to part the extenſive offices of this profeſſion, and to ſeparate the practice of the chirurgical from the reſt of the medicinal art. This diviſion has been more than once attempted, and more than once ſuſpended: but it is now three hundred years ſince it has appeared to be intirely eſtabliſhed.

It has been obſerved, in the firſt article, that the art of midwifery, although it ſeems to make a part of ſurgery, has been always exerciſed by women. Even ſince the faſhion has ariſen of having *accoucheurs*; they, though taken from among the body of ſurgeons, are attached to the part which regards labours, in ſo particular a manner, that

that they appear to have renounced the reſt of ſurgery. The art of midwifery has, therefore, been, for a long time, erected into a peculiar profeſſion, which is, perhaps, at preſent, more really the caſe, than ever it was formerly: and I believe it to be an advantage to the public.

In proportion as the practice of midwifery has been ſeparated from the reſt of the healing art; and become an independent one, it has been thought proper to detach from the body of ſurgery, all that concerns it; and to write particular treatiſes on it. It is theſe treatiſes, which I conſider as the elements of the art, that I propoſe to ſpeak of in this article: but I ſhall, nevertheleſs, ſpeak only of the firſt of them: and even of ſuch, only in a ſummary manner.

The moſt antient of the treatiſes of this kind is, that of Moſchien, which we have already mentioned. He is a Greek author, whoſe time it is difficult enough to fix; but I do not believe it ſhould be placed higher than the eighth century. Geſner was the firſt who publiſhed it, from a manuſcript full of faults and hiatuſſes: which he has endeavoured to correct and fill up; but without much ſucceſs. He recovered, ſome time after, an antient tranſlation of this work into Latin, done by a Jew, which ſerved him to amend ſome places of his Greek manuſcript. But this

this tranſlation was itſelf very faulty and defective; and by no means proper to render the original Greek perfect. There are, in two great libraries, ſeveral manuſcripts of this work; and it would be well that uſe were made of them, to give a more complete and corrected edition of it: which would ſerve, at leaſt, to inform us of what was known at that time of the art of midwifery.

The ſecond work, profeſſedly compoſed on the art of midwifery, is that of Trotula; written in Latin. Geſner, for ſome reaſon I am ignorant of, has given it to one Eros, a freed-man of Julia, the daughter of the emperor Auguſtus. But every circumſtance proves it to be the work of a midwife of Salerno, in Italy, who takes the name of Trotula; and who lived, as I believe, in the thirteenth century. In this book, the art of midwifery is particularly treated of in detail: but ſeveral diſtempers of women are alſo conſidered; and ſeveral kinds of paint, of which the women of Salerno made uſe, as the author ſays, are likewiſe enumerated. This work, as well as that precedingly mentioned, has been inſerted in the collections of *De Gynecæos* of Gaſpar, Wolphius, and Iſrael Spachius. It were to be wiſhed, that a new edition of it might be publiſhed: not in order to teach any thing unknown at preſent; for the art

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of midwifery is greatly improved ſince her time; but to ſupport a chronological chain of the diſcoveries that have been ſucceſſively made in it.

I give the third rank to the treatiſe, that Eucharius Rhodion, a phyſician of Frankfort on the Main, publiſhed in German. I have only ſeen the Latin tranſlation of this work, printed at Franckfort, in 1532, in twelves, under the title of *Libellus de partu et quæ circa ipſum accedunt*. But it appears by the letter, which the bookſeller at Francfort wrote to Eucharius Rhodion, ſon of the author, that it had been printed ſeveral times before in Germany; and very tolerably received.

This work contains twelve chapters.

I. *Quo ſitu atque habitu partus in utero quieſcit, et quot pelliculis idem circumvolvitur?*

II. *Quod tempus pariendi, et qui partus naturales, et qui contra naturam fiunt?*

III. *De facili partu et difficili, et quo partûs facilitas aut difficultas hæc cognoſci poteſt?*

IV. *Quid parientibus maximè agendum, et quomodo ægrè parientibus ſubveniendem eſt?*

V. *Remedia, quæ partum adjuvant et facilem reddunt?*

VI. *Quomodo ſecundina à parientibus eximenda, ſi ea ſponte ſuâ non diceſſura ſit?*

VII. *Varii caſus, qui circa, aut etiam poſt partum mulieribus accidunt; quo pacto, et quibus*

quibus remidiis præcaveri atque curari debent?

VIII. *De abortientibus, et cauſis abortuum, et quibus remediis iidem præcaveri poſſint?*

IX. *De partubus emortuis, et quibus ſignis cognoſcantur, et quomodo.*

X. *De recèns natis, quomodo fovendi, alendi et curandi ſint?*

XI. *De lacté et nutrice, et quamdiù infanti mamma præbenda?*

XII. *De variis morbis et caſibus, in quos recèns nati incidere ſolent, et quomodo iidem curandi?*

James Rueff, a ſurgeon of Zarich, publiſhed, at that place, in quarto, in the year 1554, a work intitled *De conceptu et generatione Hominis*, divided into ſix books. The firſt contains ſix chapters, *tractatque de generatione hominis.* The ſecond, contained the ſame number of chapters likewiſe, and treated *de matrice ejuſque partibus et conditione infantis in utero.* The third, *de partu et parturientium infantiumque omnifaria curâ*, in ſix chapters. He treats in the fourth book, *de varietatibus non naturalis partûs et earumdem curis*, in fifteen chapters. The author ſpeaks in the fifth book, in ſixteen chapters, *De molâ aliiſque falſis uteri tumoribus, ſimulque de abortibus.* In the ſixth and laſt book, he diſcourſes in eleven chapters, *de*

ſterilitatis cauſis diverſis. The four laſt books belong to the art of midwifery; which induced me to make mention of this work. The author would have done well, to have contented himſelf with publiſhing theſe laſt books, to which his abilities were competent: but he was deſirous to exhibit his knowledge in the two firſt, on a ſubject to which he was not equal.

I have the ſame opinion of the treatiſe, publiſhed by Ambroſe Parè, firſt ſurgeon to three ſucceſſive kings of France, intitled *De la génération d' l'homme* (of the generation of man); which makes the ſixteenth book of his works: of which the firſt edition was printed at Paris, in the year 1582, in folio. There is, in this book, a detail of the conduct that ſhould be obſerved in all the different kinds of delivery, which is moderately good, conſidering the time in which he lived. But it would have been much better, if what he ſaid on deliveries had not been buried in a heap of diſquiſitions, difficult, uſeleſs, and foreign to the proper matter of his ſubject. But it was the ruling taſte of this author, who was oſtentatious of his Greek and Latin erudition, and of citations from antient authors, that had written in either of theſe languages, and who took a pleaſure in diſcuſſing the moſt knotty queſtions of phyſic in the works which he wrote, or rather

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procured to be written. For ſuch a parade in the writings of a ſurgeon, who had no learning, creates a diſpoſition to liſten to the reproaches that were made him even while he was living, of having retained ſeveral young phyſicians to write for him.

I ſhall conclude with a book, compoſed by Louiſa Bourgeois, called *Bourſier*, midwife to Mary de Medicis, queen of France, to whom ſhe dedicated it. This book contains fifty chapters: and was printed at Paris, in the year 1609, in twelves, under the title of *Obſervations diverſes ſur la ſterilité, perte de fruit, fécondité, accouchemens, et maladies des femmes et enfans nouveaux nés*; (Obſervations on barrenneſs, miſcarriage, fertility, deliveries, and the diſeaſes of women and new-born children). It may be judged hence, that what concerned deliveries, made only a part of this work. There is not, indeed, any order or method obſerved in it; but it is, nevertheleſs, written with a freedom and ingenuity which leaves no room to doubt, that the writer did not put into it every thing ſhe knew: and it appears, ſhe did know every thing that was known in her time.

Since then, there has been a great number of treatiſes on this ſubject, which all the nations in Europe have, as it were, in concert, earneſtly applied themſelves to elucidate, explore, and render perfect. It would be a very hard taſk, to

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enumerate all the works written in French and Latin; but it would be impoſſible to do it with reſpect to thoſe in Dutch, Engliſh, Flemiſh, and Italian; of which I have never ſeen the greateſt part. But I have read enough of them; and particularly the moſt modern and beſt eſteemed; to make me preſume, I have collected what is beſt; in ſuch manner, that this work may be conſidered, as an abridgement of thoſe treatiſes.

The emulation which there has been for ſixty years, in writing on this ſubject, has ſo advanced the progreſs, which has been made in it, that there is little wanting to render the art of midwifery perfect; and to bring the operations, neceſſary in the practice of it, to a geometrical certainty. Nor is there any reaſon for wonder at it: for, after all, this art may be reduced to the following mechanical problem. *A diſtenſible cavity of a certain capacity, being given, to draw a flexible body of a given length and thickneſs, through an opening dilatable to a certain degree*; which might be reſolved geometrically, if the different degrees of the *vis invertiæ*, or claſtuity in the *uterus*, and of the force and weakneſs in the child; the greater or leſs inflammatory quality of the blood; the more or leſs irritable diſpoſition of the nerves of the *uteruſſes*, *&c.* did not ſuperinduce that uncertainty in the matter which phyſiological facts ever give to all phyſico-mathematical queſtions.

THE

THE ART OF MIDWIFERY REDUCED TO PRINCIPLES.

BOOK I.

Of the Knowledge previous to the Art of Midwifery.

CHAP. I.

Of the Bones which form the Baſon.

THE *uterus*, which contains the child during pregnancy, is itſelf contained in the lower part of the *abdomen*, in a ſpace known by the name of the *Baſon*; and ſurrounded with bones on all ſides. This place is very well accommodated both to the advantage of the mother, and the child: to the mother; becauſe the child, being ſupported below by the bones that form the baſon, is borne by her, more eaſily, without any dragging: to the child, becauſe, being thus borne below by the bones, it has full liberty to extend and raiſe itſelf upwards; in which direction, there is no-

thing over it, but the parts floting in the *abdomen*, which eaſily give way.

The bones which make the extremities of this baſon, and ſerve to form it, are three in number. The *os ſacrum*, at the back, and the two *oſſa inominata*, at the ſides and fore part. Thoſe who deſign to learn the art of midwifery, ſhould know well the poſition, figure, articulations, bigneſs, and curvitude of theſe bones; becauſe it affords great help for judging rightly of the ſpace they leave betwixt each other below, through which the infant muſt paſs in delivery. It is, therefore, neceſſary to give a deſcription of them; but ſuch a brief one, as confines the conſideration only to what is requiſite to be known, in order to underſtand the danger any particular conformation of theſe bones may cauſe in delivery.

I. The *os ſacrum* is placed, at the hinder part of the baſon, at the extremity of the *vertebræ* of the ſpine of the back, the whole column of which it ſupports. This bone is nearly of a triangular form, larger and thicker in the upper part, and ſmaller and thinner in the lower; where it terminates in a point. Its ſurface is pretty even; and, in the fore part, pierced with two perpendicular rows of four, or five holes each. In the higher part, this bone is convex towards the baſon: and this is the place where the child, ſometimes, finds moſt difficulty to paſs. It forms on the contrary, a concavity in its middle and lower parts; where its point bends inward, to form along with the *coccyx*, which is fixed to it, the bottom of the baſon; and facilitate the means of ſitting.

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The back ſurface is more uneven; as there are in it, ſeveral eminences, which ſeem ſo many *veſtigia* of the *apophyſes*, of four or five *vertebræ*, that unite, and are confounded together, to form this bone. There is obſerved, in this ſurface, two other rows of holes, in number, four or five on each ſide; but they are larger than thoſe of the fore ſurface, to which they anſwer.

Beſides theſe two rows of holes, there is found in the *os ſacrum*, another perforation, or rather a paſſage, or duct, which begins at the upper part of the bone, croſſes the whole length of it, and ends at the point. This duct ſerves to receive, and contain the extremity of the marrow of the ſpine, which terminates at the *os ſacrum*; and, conſequently anſwers to the cavity which goes through all the *vertebræ*, the whole length of the ſpine. The holes we have remarked, both in the fore and back ſurfaces, of the *os ſacrum*, are intended to give a paſſage to the nerves, which going off, from the marrow of the ſpine, before and behind, are diſtributed in the neighbouring parts.

The *os ſacrum* is articulated with four other bones: at the upper part, with the *vertebræ* of the loins, by an articulation that admits of the motion of contraction and extenſion: at the lower part, with the *coccyx*, by the interpoſition of a cartilage, and ſome ligaments, which ſuffer the *coccyx* to move in every direction: and, laſtly, its upper ſides, with the two *oſſa innominata*, one on each ſide. This articulation is very firm: being made by the inſertion of projections, into ſinuoſities, which correſpond with each other on the oppoſite ſurfaces of the

bones; and ſtrengthened by the interpoſition of a thin cartilage, placed betwixt them: and it does not admit of any motion of the *os innominatum*, at leaſt in its natural ſtate.

II. The *coccyx* is ſo called in Greek, becauſe it reſembles the bill of a cuckow; and fixed, as was before mentioned, to the point of the *os ſacrum*. It is formed of four little bones, in a figure nearly ſpherical: and which diminiſh in proportion as they gain a diſtance from the *os ſacrum*. Theſe bones are placed, like beads on a ſtring; and conjoined with each other, as well as with the point of the *os ſacrum*, by the interpoſition of a little cartilage, which covers them, and leaves them at liberty to extend outward, or bend inwards, according to different occaſions. Theſe bones are not placed in a right line, but bend forwards, the ſame as the point of the *os ſacrum*; and for the ſame reaſon.

III. The *oſſa innominata* are two large pieces of bones, which make a great part of the cavity of the baſon. Theſe bones are, in children, always formed of three diſtinct parts, joined together by ſlight cartilages; which, oſſifying gradually in adults, become one intire continued bone, on each ſide. Theſe bones thus united, as they are found in adults, have no name; for which reaſon, they are called the *oſſa innominata* (that is to ſay, *bones without names*). But the three bones, of which each *os innominatum* is formed, have their peculiar names; as if they could be ſeparated again.

The two firſt, called *the bones of the ilion*, making the back part of the *oſſa innominata*, are articulated on each ſide with the *os ſacrum*, as we have before mentioned. They are broad and flat, a little concave and oval, towards the baſon;

ſon; and their upper ſide, turned into a half circle, forms the upper edges of the hips.

The two ſecond, which are called *the bones of the iſchium*, make the middle of the *oſſa innominata*, on each ſide. There is nothing remarkable in them, but that each has a deep cavity, called the *cotyle*, which is in their outward part, and ſerves for the articulation of the *femur* (or thigh bone); and a round projection, which is at the lower part, and known by the name of the tuberoſity of the *os iſchium*.

The two laſt, are called the *oſſa pubis* (or bones of the *pubis*), becauſe they are ſituate in the place, called in Latin, *pubis*. They make the fore part of the baſon; and are both perforated, in the middle, by a large oval opening; which they have in common with the *os iſchium*, but which has no uſe in delivery. They are joined together before, where their upper parts touch, and are conjoined by a cartilage. But in the ſame place, their lower parts receding from each other, leave a ſpace for the paſſage of the *urethra* in men, and the *vagina* in women.

IV. Theſe *oſſa innominata* widen in the upper part, and form a pretty ſpacious cavity. But they come nearer each other below; and only leave a narrower opening there, which is yet more contracted by the hinder part of the *coccyx*, and the two tuberoſities of the bones of the *iſchion*, at the ſides. This is the opening which the child muſt paſs through in the delivery; and it is of importance to take due notice of it: in order to judge according to the conformation of any particular ſubject, of the facility or difficulty, which the child will have, to make its way through it.

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V. To diſtinguiſh well the magnitude of the baſon, formed of the bones which we have deſcribed, and of the opening which they leave below for the paſſage of the child, it is neceſſary to obſerve the ſkeleton of a woman, and compare it with that of a man. This will afford great occaſion to admire the wiſdom of the author of nature; who has been attentive to make the baſon larger in women, and to give a greater diameter to the opening, which theſe bones leave below, in order that the paſſage of the child may be rendered more eaſy.

1. The *os ſacrum* is more open, and goes farther outwards in women, for which reaſon, their buttocks are larger.

2. The bones of the *ilium* are more hollow inwards, and convex outwards: on which account their hips are bigger.

3. The bones of the *iſchium* go more outwards; and their lower tuberoſities are farther aſunder, which leaves the paſſage free.

4. The bones of the *pubis*, on the one hand, project more outwards, and make the cavity of the baſon ſo much larger in proportion: and on the other hand, they touch and unite above, in a ſmaller ſurface; and by a little cartilage which is ſofter and thicker; and below they recede from each other, much more than in men; which ſerves to render the paſſage wider.

5. Laſtly, the bones of the *coccyx* are conjoined by ſofter and thicker cartilages; in conſequence of which, they are more moveable, and eaſy to be puſhed outwards: which contributes to enlarge the paſſage.

VI. This diſpoſition of the bones of the baſon, is certainly very advantageous, when they are

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in their natural conformation. But it ſometimes happens, that, being ill formed, the child is ſtopped there, in its paſſage, in two places, which may be conſidered as two *ſtraits*; and this matter requires attentive conſideration. The place where this moſt frequently happens, and where it is moſt difficult to be remedied, is betwixt the upper internal part of the *os ſacrum*, and the bones of the *pubis*. The *os ſacrum* is naturally convex, in this part, as we have already remarked: and this convexity is ſometimes very projecting. If it happens, at the ſame time, that the bones of the *pubis*, which ought to be naturally convex outward, are flat; or, which is worſe, bend inwards; the diſtance, which will remain between the higheſt part of the *os ſacrum*, and the *pubis*, will be very narrow; and ſometimes not broader than two inches and an half, eſpecially in the middle; for the ſpace is a little bigger at the two ſides, which gives this ſtrait the form of a figure of 8. In this ſtate, the delivery muſt always be very difficult, and ſometimes impoſſible.

The other *ſtrait* is at the bottom of the baſon. The contraction of this paſſage proceeds from the tuberoſities of the bones of the *iſchium*, being too large, too long, or, above all, too much bent inwards, from the curvitude of the point of the *os ſacrum*, being too long, and too large; and from the *coccyx* being too long and inflexible: from theſe faulty conformations of the baſon, it ſometimes happens, when the child is ſtopped in the paſſage, that, in conſequence of forcing againſt the bones, to make its way out, it forces the bones of the *pubis* aſunder; and parts the articulations of the bones of the *ilium*,

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with the *os ſacrum*, which conſiderably widens the paſſage, and ſuffers the child to get through it.

This ſeparation, which was long ago obſerved by Hippocrates (*a*), Ætius (*b*), and Avicenna (*c*), has been ſtrongly oppoſed by ſome modern authors: but it is at preſent ſo firmly eſtabliſhed, by unqueſtionable (*d*) obſervations, that it can never again become a matter of doubt.

In order to comprehend the manner in which this ſeparation is made, it is proper to remark, that the bones of the *pubis* are joined together in women in a much leſs quantity of ſurface, than in men; that they are leſs intimately united; that the cartilage, which conjoins them, is thicker; and that this cartilage is naturally ſofter, and more eaſy to be ſtretched out. Thus, when the child finds itſelf ſtopped in the paſſage, and interrupts the circulation of the blood and lymph in the baſon, the *ſerum*, which drains from it, muſt gradually ſoften the cartilage, which unites the bones of the *pubis*, ſufficiently to make them give way to the force of the *fœtus*, and elongate themſelves.

When things are in this ſtate, the articulation of the bones, with the *os ilium*, have but little power of reſiſting; as well becauſe the cartilages, which held them, have been ſoftened in the ſame degree; as becauſe the *fœtus* in ſepa-

(*a*) Libro *de naturâ pueri*, in fine. (*b*) Tetrabiblio IV. *Sermone* IV. *cap.* 22. (*c*) Libro III. *Fen.* XXI. *Tract.* I. *cap.* 3. (*d*) Ambroſe Paré, *liv.* XXVIII. *cap.* 13.

Jean Riolan *Anthropograph. lib.* V. *cap.* 13.

Caſpar Bauhin, *Theatri Anatomici, lib.* I. *cap.* 49.

Guliaulme Fabrice de Hilden, *Obſerv. Chirurg. Centur.* VI. *Obſerv.* 9.

Guliaulme Harvée, *lib.* II. *de génerat. Animal. Exercit.* 57.

Iſbrandus Deemerbroëck, *Anatom. lib.* IX. *cap.* 26.

Adrien Spigelius, *lib.* II. *de humani corporis fabricâ, cap.* 24.

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rating the bones of the *pubis*, acts as a lever on these articulations, from the length of the *ossa innominata*.

Thus, in proportion as the bones of the *pubis* operate, the articulations of the *ossa innominata* open; and this is increased more and more, in proportion as the separation is greater. Hence the *fœtus* procures a passage out; and, in order to effect it, only a very moderate separation of the bones of the *pubis* is required.

When the child is come forth, and the freedom of circulation of the blood and lymph is restored, in all the parts of the bason, the cartilages of the three articulations contract, grow close again, and bring the bones of the *pubis* and themselves together; and the *ossa innominata* and the *os sacrum*. These bones regain thus their ordinary situation; and there remains no other consequences of their separation, but some degree of pain, which is perceived about the *os sacrum*, and soon goes off.

CHAP. II.

Of the uterus, *and its different positions.*

THE anatomical knowledge of the structure of the *uterus*, of the kind of vessels that supply it, and of the distribution and use of such vessels, is not necessary for midwives, in order to the manual performance of deliveries: and the particular knowledge of the other parts, from which the child comes forth, that is to say the *vagina* and *vulva*, is still less so. For which reason, I shall here only explain, in a summary manner, what is requisite for their instruction,

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in order to enable them to acquit themſelves of the duty of their office.

I. Three parts are diſtinguiſhed in the *uterus*; the *fundus*, *neck*, and *orifice*; and it is neceſſary that midwives ſhould have a general knowledge of each of them.

1ſt. The *fundus* of the *uterus* comprehends all the upper part; and, conſequently, makes two thirds at leaſt of the whole volume of it: the child lies there; and the *fundus* being therefore ſufficiently dilated by the growth of it, has no occaſion to be more ſo in delivery. There might ſeem reaſon to believe, that the *fundus* ſhould grow thinner by its dilatation in pregnancy; but the fact is quite otherwiſe. It grows, on the contrary, thicker; by the enlargement of the blood veſſels which are diſtributed there. Its ſubſtance is then found to be commonly eight or ten lines, or even ſometimes an inch in thickneſs; which is of great utility, in preventing its *fundus* from being torn; as happens in ſome caſes, by violent motions of the child, which, by ſtretching itſelf in difficult labours, puſhes it ſtrongly outwards.

2dly. The lower part of the *uterus*, called its *neck*, is too ſtrait, even at the end of pregnancy, to ſuffer the child to paſs out; but it is dilated by the ſtay the child makes there, after it has turned itſelf over, at the approach of the time: and this dilatation is the more eaſily performed, as the volume of the child, by compreſſing the ſubſtance of the neck, retards the circulation of the blood and lymph in it, which cauſes a diſcharge of *lymphous ſerum*, that ſoftens and renders it diſtenſible.

3dly.

3dly. The moſt ſtrait place is the *orifice* of the *uterus*; and it is there the great difficulty in delivery is found. This orifice is entirely cloſed during pregnancy; and only opens itſelf at the time of delivery, in a ſufficient degree to ſuffer the child to paſs through. This dilatation muſt be principally attributed to the action of the child, which, by ſtretching itſelf out, forces the paſſage; but to this, the ſimultaneous contraction of the radious fibres, which ſurround this orifice, muſt contribute; and it is alſo rendered more eaſy, by the ſoftening of the fibres of the orifice itſelf, which the ſtay of the child there occaſions, for the reaſon beforementioned.

The difficulty of overcoming the reſiſtance of the orifice of the *uterus*, varies in different ſubjects. There are ſome, in which the orifice is very ſtrait, particularly in the firſt labour; and in which, at the ſame time, the edges are more denſe, compact, and rigid; as is common in women of advanced age, and renders the labour difficult.

There are ſome alſo in which the edges are hard, callous, and almoſt ſchirrous, in their whole circumference, or, at leaſt, in one part, in conſequence of ſome diſeaſe, or ſome difficult labour, which has preceded: and, in theſe caſes, the delivery muſt of courſe be laborious.

There are others, on the contrary, in which the edges are flat, thin, and flaccid; yield eaſily to the force of the child, and open without trouble; which renders the delivery ſo quick, that the midwife may be ſuprized, if ſhe be not attentive. But theſe women are liable not to go

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their full time, and ſubject to be hurt in the delivery.

Laſtly, There are ſome, who have theſe edges ſupple, ſoft, thick, pulpous, and eaſy to be diſtended to the due degree only. This is the moſt common caſe, and the moſt advantageous to delivery.

When the child has a difficulty in forcing the paſſage, particularly if it preſent itſelf obliquely to the orifice, the edges, in conſequence of being too much ſtretched, may ſuffer tears or cracks; which may have a bad effect. The midwife ſhould be careful to avoid this accident, by not haſtening the delivery; by greaſing well the paſſage with freſh butter; by aſſiſting gently the dilatation; by directing, properly, the head of the child; and, particularly, by obſerving not to do the miſchief herſelf, through miſmanagement or hurry.

II. As ſoon as the head of the child has got free from the *orifice* of the *uterus*, and the ſhoulders are within it, the child is ſaid to be *in the paſſage*, becauſe it is in the *vagina*; and the labour is then thought, with reaſon enough, to be over. For the *vagina*, of which the ſubſtance is eaſily dilatable, yields readily, and ſuffers the child to go forwards. Its own *orifice*, where the *caruncul æ myrtiformes* are, is a little ſtraiter, and reſiſts ſomewhat more, but not long.

III. The child falls at laſt into the *vulva*, from whence it quickly comes out. The folds which are in this part, known under the name of *nymphæ*, extending themſelves, enlarge the width, and give a free paſſage to the child.

It happens ſometimes, nevertheleſs, that the head of the child preſents itſelf obliquely; and bearing

bearing too much upon the bottom of the *vulva*, on the ſide of the *Coccyx*, tears the partition that ſeparates the *vulva* from the *fundament*; which cauſes a bad and troubleſome inconvenience.

IV. It is very material, to know the poſition of the *uterus* in the baſon, in women who are to be delivered; becauſe it ſerves to regulate the manual performance of the delivery: midwives cannot, therefore, apply too attentively, to gain inſtructions with reſpect to it.

The moſt natural, and moſt advantageous poſition of the *uterus*, is to be placed ſtrait, in ſuch a manner, that its *fundus* and *orifice* may be in a line with the *vagina*. It is eaſy to apprehend, that in this poſition, the functions, which are proper to it, are more eaſily performed; that, on one hand, the ſeminal fluid will more eaſily penetrate it; and that, on the other, the *fœtus* can come out with leſs trouble: beſides the conſideration, that nothing can ſtagnate in its cavity; which prevents many inconveniencies. There are ſome women, who are ſo fortunate to have the *uterus* thus placed: but the number is not great; which is no wonder.

The *uterus* bears, by its point, that is to ſay, by its narroweſt part, on the extremity of the *vagina*. Nothing holds it at its ſides; for no ſtreſs can be laid on thoſe pretended round *ligaments*, which give way eaſily on all occaſions; and which in pregnancy, where their action would be moſt neceſſary, are not of any uſe; becauſe their inſertion is then at the neck of the *uterus*; and they cannot ſerve to keep the *fundus* ſtrait; which is, at that time, raiſed very much above, by its dilatation, in conſequence of the growth of the child.

The leaſt thing, therefore, is ſufficient to make it incline to either ſide: and ſo far from its being extraordinary, that the *uterus* ſhould be ſo often oblique, there is much more reaſon to be ſurprized that it is not always ſo.

In girls, and women who have never had children, different cauſes may conduce to this obliquity.

If the *uterus* be a little larger, or more diſtended on one ſide; if the canal of the *vagina* be ſhorter, or its extremity, where the neck of the *uterus* enters, be a little more lax on one ſide than the other; if, independently of theſe faults of conformation, the women have had a long habit of laying on one ſide; if they have the cuſtom of holding their urine, in which caſe the bladder, being too full, puſhes the *uterus* backwards; if they be naturally coſtive, under which circumſtance the *rectum*, being too much diſtended, will puſh it forwards; or, what is leſs than any of theſe, if any of the parts floating in the *abdomen*, weigh unequally on the *uterus*, it will be a ſufficient cauſe to diſplace it.

Though the obliquity of the *uterus* be not rare in girls or women, who have never been with child, it is ſtill much more common in pregnant women, for two reaſons.

The firſt, that the *uterus*, which bears only on its point, as we have ſaid, is then much bigger, broader, and heavier, in ſuch a degree, that it is, as it were, impoſſible, that it can reſt *in equilibrio*, placed on a baſe ſo narrow, without inclining to one ſide or other.

The ſecond, that the *fœtus* it contains, muſt, in a great number of caſes, make it incline to one ſide or other. We ſhall ſee, in the following chapter,

chapter, that the *placenta* adheres in the *uterus* towards the *fundus*; but that it does not adhere always exactly in the middle of it. However little this adhesion may be distant from the middle, it will still be sufficient to make the *uterus* incline to the other side.

When a woman has had the *uterus* oblique in her first pregnancy, she will have it the same in all the others: because the fibres of the *uterus*, on the side towards which it has inclined in its first pregnancy, are become shorter; while those, on the opposite side, are elongated; which subsists in the other pregnancies, and determines the position of the *uterus* in them. This is the reason, women are heard to say, they bear all their children in the loins, on the right side, or on the left; which, being reduced to its proper sense, signifies, that they have had in all their pregnancies, the *uterus* oblique, backwards, to the right, or to the left.

Midwives cannot be too much exhorted, to take notice of the obliquity of the *uterus*, at least in the time of labour; if they have not had the precaution to inform themselves sooner of it. Labours are often long and difficult, only because the necessary attention to this point has been neglected. When the *uterus* is oblique backwards, the head of the *fœtus* strikes against the fore part of the edge of the *orifice* of the *uterus*; and all its efforts are made on the bones of the *os pubis*: and they are made against the *os sacrum*, and the edge of the back part of the *orifice*, when the *uterus* is oblique forwards. But if it be oblique towards either side, the head of the child stops against the edge of the orifice on the opposite side; and all its

efforts are then fruitleſsly made againſt the bones of the *Iſchium*.

In all theſe caſes, therefore, the labour is long and difficult: the child, as well as the mother, are exhauſted by vain efforts; the delivery makes no progreſs, and often ends in ſome bad accident; at leaſt, if the midwife does not recollect herſelf; and think of rectifying the child and putting it at laſt in its proper way; which, nevertheleſs, ſhe might have done, more conveniently and advantageouſly, at the very beginning.

CHAP. III.

Of the coverings of the fœtus, *or the* after-birth; *the poſition of the after-birth in the* uterus; *and that of the* fœtus *in the after-birth.*

I.

THE child is contained in the *uterus*, incloſed in a membraneous bag entirely ſurrounding it, and formed of two membranes, diſtinct from, but in contact with, each other. This bag contains, beſides the *fœtus*, a great quantity of *ſerum*, known by the name of the *waters of the birth*. A part of the exterior ſurface of this bag is covered with a body, that is ſoft, ſpongy, and reddiſh. The ſeveral parts, which form this bag, are known together by the names of the *after-birth*, or *ſecondine*: and it is of conſequence to diſtinguiſh them, with the greateſt exactneſs.

I. The outward membrane of this bag is called *Chorion*. It is denſe, firm, thick, very ſmooth, and even on the ſide, which is toward the

the interior membrane; but covered, on the exterior ſurface, with little inequallities, or lumps, of a red and pulpous ſubſtance: of which we ſhall explain the uſe in the following articles.

II. The interior membrane is called the *Amnios*. It is very thin, fine, and ſmooth on both ſides; and lies againſt the interior ſurface of the *chorion*, without adhering to it; being kept ſeparate, by a ſmall quantity of mucilaginous lymph.

III. About a third part of the firſt of theſe membranes, that is to ſay, of the *chorion*, is covered with a ſubſtance, ſoft, ſpongy, pulpous, of a round figure, ſeventeen or eighteen inches in diameter; of the thickneſs of an inch, or an inch and half, at its center, and thinner towards the circumference, which is ſcarcely half an inch thick. This body reſembles, therefore, a cake; on which account it has been called in Latin, *placenta*; which name it preſerves alſo in Engliſh, *(though more frequently the whole of the after-birth is at preſent called ſo.)* This body is principally deſigned to receive the nouriſhment of the *fœtus*, and to tranſmit it. The lumps, which have been mentioned to cover the interior ſurface of the *chorion*, are conſidered as ſo many little *placentæ*, intended for the ſame purpoſe: and the ſimilitude, which they have to the great *placenta*, authorizes this opinion.

IV. The *fœtus* ſwims in the middle of the ſerous lymph, contained in the *Amnios*; and it adheres to the after-birth by a *cord*, which may be ſix or ſeven lines in diameter. This cord goes from the navel of the child; and terminates near the center of the *placenta*. It contains two arteries, and a vein. The arteries riſe to the right

and left of the two iliac arteries; and carry the blood of the *fœtus* to the *placenta*, and the other coverings; and the vein conveys back the blood, which comes from the ſame parts, and tranſmits alſo the juices that the mother furniſhes for the nouriſhment of the *fœtus*. When this vein arrives at the navel, it aſcends towards the liver, and pierces the trunk of the *vena porta*; and the blood which it contains, paſſes, for the moſt part, into the venal canal, that conveys it into the *vena cava aſcendens*. Theſe three veſſels, form, in the centre of the *placenta*, a great number of large ramifications; which, ſubdividing ſeveral times, make the number of capillary veſſels that are ſpread over the *placenta*, and the coverings, particularly the *chorion*.

II.

The poſitions of the after-birth in the *uterus*, and that of the *fœtus* in the after-birth, are too conſtantly the ſame, to be the effect of hazard always variable. They muſt depend on a mechaniſm, that determines them, and which it is proper to examine; becauſe they conduce much, as we ſhall ſee below, to the ſituations in which the children preſent themſelves in the labour.

The after-birth preſerves one conſtant poſition in the *uterus*: reſulting from the adheſion of the *placenta* to the *fundus*. The opening the bodies of women, who die in the time of pregnancy, evinces this fact; and, moreover, there is no midwife who does not know by experience, that, when ſhe is obliged to ſeparate the *placenta*, it is almoſt always at the *fundus* of the *uterus*, ſhe does it.

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This regularity, in the place of the adhesion of the *placenta*, depends on a very constant physical cause. The fecundated *ovum*, which has descended from the *ovaria* in conception, swims for some time, without any adhesion, in the lymphatic milky fluid, that is collected in the *uterus*. During this time, the *placenta*, which is the most spongy, and light part of the *ovum*, must of course, occupy the highest part; which answers to the *fundus* of the *uterus*, and keep always there till such time, as it adheres to it by growing: which fixes its own position, and that of all the after-birth, for the whole future time of the pregnancy.

If this reason was always to prevail strictly, the *placenta* must ever adhere to the middle of the *fundus* of the *uterus*, directly against its orifice: and the fact would be so; if all the lateral parts of the *ovum*, about the *placenta*, were equally heavy; and the position of the *uterus* were always perfectly straight: but, both of these circumstances are often otherwise. Sometimes the *ovum* is a little heavier on one side than on the other; which makes the *placenta* incline that way; and, in such case, it cannot begin to adhere exactly in the middle of the *fundus* of the *uterus*. At other times, the *uterus* itself is not straight, but inclines forwards, backwards, to the right, or to the left: and, of course, if the *placenta* do not occupy the highest point of the *ovum*, it cannot adhere to the *fundus* of the *uterus*. In establishing, therefore, the general rule, it is easy to foresee the exceptions, which it must admit in several conjunctures.

III.

The *fœtus* contained in the after-birth, where it ſwims in the water of the *amnios*, is always placed with its head higheſt; and in this poſition, it is conſtantly found, when women are opened who die in their pregnancy. This poſition of the *fœtus* in its coverings, proceeds from the ſame cauſe, as we have produced, to account for the poſition of the *placenta*. The upper part of the *embryo*, is the lighteſt part of the body; either becauſe of the cavities of the breaſt, noſtrils, mouth and ears; or becauſe the head, which is very large, is not well filled with the ſubſtance of the brain, that only grows gradually, during the time of pregnancy. This is a ſufficient cauſe for the reſt of the body to preponderate downwards: as being heavier; and for the head to gain, conſequently, the higheſt place. This rule, tho' very general, admits ſometimes of exceptions: as, for example, if the *fœtus* have a very large head, heavier than ordinary: or that it have a *hydrocephalus* (or dropſy in the head): in ſuch caſes, either the head will fall below, if it be much heavier than the reſt of the body; or it will float irregularly, without having any fixed poſition, if it be nearly as heavy as the reſt of the body. But it is evident, that theſe exceptions confirm the rule, by conforming the natural poſition of the head of the *fœtus*, and the reaſon which is advanced for ſuch poſition.

IV.

The *fœtus* has not only its head higheſt, during the time of pregnacy: but it has, alſo, its faced turned forwards, and its back ſupported againſt that of its mother. This poſition is proved by obſervations made in the opening of pregnant

pregnant women, who have died when near their time: and from thence may be inferred the new poſition, which the *fœtus* takes at the end of nine months; after having made the turn, of which we ſhall ſpeak in the following chapter. At that time, it has not only its head loweſt againſt the orifice of the *uterus*, but its face turned backwards againſt the *os ſacrum* of the mother: which proves, that it had before, during the pregnancy, the head placed higheſt, and the face turned forwards; as we have mentioned.

As to this poſition, it is apparent, the *fœtus* procures it to itſelf mechanically for its eaſe. So long as it is ſmall, and that it does not fill the cavity of its coverings, it may move itſelf as it will; and all ſituations are then pretty equal to it in this reſpect: but where it is bigger, its ſtate obliges it to take the ſituation we have aſſigned to it. By this means, the convexity of its back correſponds with the concavity of the *os ſacrum*, and the loins of its mother; and its head, knees, and elbows, find themſelves more commodiouſly placed againſt the ligaments of the *abdomen*, that only oppoſe a ſoft, unreſiſting ſubſtance to them: which would not be ſo in the contrary poſition, if they were turned towards the *os ſacrum*, the bones of the *ilium*, and the *vertebræ* of the loins, againſt which they would be compreſt and rubbed.

V.

Laſtly, it is not for its eaſe only, but from pure neceſſity of accommodating itſelf to the ſpace which it muſt occupy, that the *fœtus* is doubled, and ſhortened in its coverings, towards the end of the pregnancy. Its heels are placed againſt its buttocks;

buttocks; its head betwixt its two knees; the hands are commonly put upon the face, and the arms bent back, and placed againſt the buttocks. In a word, it is in the form of a bowl: and, by this means, it occupies the leaſt ſpace poſſible; and is in the only ſituation, the cavity of the *uterus*, and its own coverings could poſſibly admit. Happily its articulations are ſo lax and flexible, that it ſuffers no inconvenience from the doubling of its limbs.

It does not appear that the *fœtus* in this ſituation, can move much. All the motions in its power are, to ſtretch out a little its heels; to widen a little its knees, or elbows; or to make ſome flexion or extenſion of its head; till ſuch time as it is forced by an admirable mechaniſm, which will be explained below in the chapter, to turn itſelf over: which gives it a little eaſe; and is, as it were, the firſt advance towards delivery.

CHAP. IV.

Of the examination of the parts before delivery; commonly called TOUCHING.

THE midwives are not uſually ſent for, till the labour begins; and then it is more proper to execute, than examine. But when they can have acceſs to the women, who are to be delivered, it is very proper to examine towards the end of their pregnancy, the ſtate of the parts, in order to diſcover the facility, or difficulty, which there will be in the labour.

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This examination turns on four points: on the ſtate of the *vagina:* on that of the bones, which form the baſon: on that of the orifice of the *uterus*; and on the poſition of the *uterus* itſelf. They are not all, indeed, of the ſame importance; but they all merit, nevertheleſs, to be treated as diſtinct articles.

I. The examination of the *vagina* is ſoon made; and it ſeldom happens, that any thing which demands attention is found there; eſpecially in a woman who has conceived, or who has made any uſe of thoſe parts. There are, notwithſtanding, obſervations which ſhow, that ſteatomatous humours have ſometimes formed there, which diminiſh the diameter of the paſſage; and that there are adheſions of the ſurface, in conſequence of neglected ulcers, or exeonations, and membranous partitions, which cloſe the cavity of the *vagina*, excepting ſome ſmall perforation through them. It is a matter of ſurpriſe, that in ſpite of theſe obſtacles, there have been women who have conceived; which makes it evident, there is in the *vagina*, on theſe occaſions, a periſtaltic motion, that impels into the *uterus*, a little of the ſeminal fluid which eſcapes bye theſe obſtacles: as the periſtaltic motion of the *æſophagus* conveys the aliment from the mouth into the ſtomach. Among theſe obſtacles, there are ſome, which muſt be remedied as ſoon as they are known. Such is the membranous partition, that cloſes the cavity of the *vagina*, and which is of the ſame kind as thoſe found at the neck of the *vagina* in girls, who are imperforated. Sometimes they may be torn with the nails; and this is the beſt method when it will ſucceed: but in all other caſes, it is proper

a ſimple,

a ſimple, or crucial inciſion, be made by a defended biſtori, that will not riſe above a certain degree; which renders it incapable of wounding the ſubſtance of the *vagina*. It muſt be introduced into the hole, that goes through the membrane intended for a paſſage for the *menſes*.

If any conſiderable ſteotomatous tumour be found in the *vagina*, which fills its cavity, and forms an impediment to the paſſage of the child, it muſt be extirpated, by means of a ligature; or by amputation. In this caſe, however, the pregnant women, who know their condition as to this point, take care to declare it; and there is time enough to remedy it before the end of their pregnancy. But if there be any tubercle along the *vagina*, or any ſmall tumours, they may be diſregarded: becauſe the coats of the *vagina* are ſufficiently diſtenſible to yield a paſſage to the child, in ſpite of ſuch ſlight impediments. With regard to the adheſions of one part of the *vagina*, to another, if they be of a ſmall extent or lax; eſpecially, if they be only formed of tendinous filaments; it would be well to divide them with a muffled biſtori, that ſhould be conducted with dexterity, by the aid of one or two fingers of the left hand; which will direct it. But, if this adheſion be very extenſive and cloſe, it would be beſt to wait for ſome of thoſe miracles, that nature ſometimes operates: and of which there is an example found in the Memoirs of the Academy of Sciences, for the year 1712, page 17, of the hiſtory. If nature effects nothing, it may be conſidered at the approach of the labour, whether the Cæſarean operation ſhall be performed, or not, for bringing away the child; or if

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an inciſion, directed in a proper manner, ſhould be made along the *vagina*, to give a paſſage to the child by that way.

In all theſe ſeveral caſes, if there remain in the *vagina*, any ſtrangulation or ſtraitneſs, it ſhould be endeavoured to relax and render it diſtenſible, by keeping conſtantly in the *vagina*, a month before the labour, a roll of linen, in the form of a peſſary, full of the pulp of emollient herbs; or a ſponge, cut into a proper length, and imbibed with ſome emollient decoction. The faults of the *vagina*, which we have mentioned, are rare; at leaſt to the degree, that may impede delivery; but it is, nevertheleſs, requiſite to have a knowledge of them.

II. The faults of conformation of the bones of the baſon, merit much more attention than thoſe of the *vagina*; becauſe they are more frequent, and not to be remedied. Theſe faults, as we have mentioned in the above chapters, may be reduced to thoſe of the two *ſtraits*: the one of which may be called the *upper*; and the other the *lower*, where the child has ſometimes great difficulty to paſs, and where, indeed, ſometimes it cannot paſs at all.

The upper ſtrait is formed betwixt the higher part of the *ſymphyſis* of the *os ſacrum*, and the *ſymphyſis* of the bones of the *pubis*, where the *vertebræ* of the loins bend inward too much; and, at the ſame time, the bones of the *pubis*, inſtead of being convex outwards, as they are naturally, are flat; or, which is worſe, are convex inwards. This ſtrait is moſt narrow in the middle, and a little wider towards the two extremities; and made conſequently in the form of the figure 8. This paſſage is almoſt always difficult

difficult for the child: but it is ſo narrow ſometimes, that it is impoſſible the child can paſs through: and there remains no other reſource to ſave the life, either of the mother or the child, than the Cæſarean operation.

The lower ſtrait lies betwixt the tuberoſities of the two bones of the *iſchium*, and the point of the *os ſacrum*, and the *coccyx*, which is affixed to it; when theſe tuberoſities are larger, longer, or more bent inwards than ordinary; when the point of the *os ſacrum* is longer, or more bending inwards; or when the bones of the *coccya*, too firmly knit together, render it leſs flexible outwards; tho' the lower ſtrait ſometimes makes delivery conſiderably difficult; the bad accidents to which it may give riſe, are not compared to thoſe, which the upper ſtrait may occaſion.

It is eaſy to diſtinguiſh the faults of conformation of the bones of the baſon, by introducing into the *vagina*, one or two of the fingers greaſed. If they be thruſt up to the orifice of the *uterus*, the curve which the top of the *os ſacrum* makes inwards, will be felt backwards: and forwards, the like curve, of the bones of the *pubis*. The diſtance, even which there is betwixt one of theſe bones and the other, may be judged of; and conſequently the impediment, which the child will find there to its paſſage. This fault of conformation may, indeed, be perceived even by external inſpection only; becauſe in theſe perſons, there is a ſinking, or hollow, at the top of the buttocks, which ſhews, that the top of the *os ſacrum* forms a bow inwards; and that the bones of the *pubis*, inſtead of being raiſed, are flat, and even incline inwards at the middle.

It is more eaſy yet, to diſcover the ſtate of the lower ſtrait: becauſe it is eaſy to judge of the ſize, length, and curvitude of the tuberoſities of the bones of the *iſchion*, as well as the length, and the curvitude of the point of the *os ſacrum*, and of the length and inflexibility of the *coccyx*. The obſtruction which theſe ſtraits, eſpecially the upper, may give to the paſſage of the child, are inſurmountable; at leaſt, unleſs the head of the child, in conſequence of its forcing forwards, may be contracted in its diameter, by being ſtretched out longer, ſufficiently to gain a paſſage, which ſometimes happens; or that the bones of the *pubis* may divide, which is alſo ſometimes the caſe in young women.

III. The orifice of the *uterus* is the paſſage of the child; on which account, the greater or leſs facility, wherewith it yields to dilatation and diſtenſion, determines the labour to be more or leſs eaſy; long, or hazardous: for which reaſon a careful examination of it ſhould be made.

1. If the edges of this orifice be even, thick, pulpous, and flexible; there is ground to believe, that it will dilate and diſtend eaſily; which promiſes a favourable labour, provided the child preſent itſelf well to the paſſage. Beſides, this diſpoſition of the edges of the orifice evinces a ſimilar diſpoſition in the *uterus*, which will be in proportion, more fibrous, and muſcular, and, conſequently, more able to contract itſelf with force in the labour.

2dly. When the edges of the circumference of the orifice of the *vagina* are flat, there is no room to doubt but that it will eaſily be dilated; which renders the labour eaſy in proportion. This diſpoſition in the orifice gives occaſion, however, to fear a like diſpoſition in the

the ſubſtance of the *uterus*, which being leſs fleſhy, would make but weak efforts in the labour. And it muſt be added, that if the child be placed croſs-wiſe in the *uterus*, and be very vigorous, there may be reaſon to fear, it may tear the *uterus*; the membranes of which are not in a condition to reſiſt.

Theſe two ſtates of the *uterus* are natural; and depend on the original conformation. It is proper to obſerve, at the ſame time, whether the orifice be wide or ſtrait; but it is difficult to judge of this in the contracted condition in which it is found during pregnancy. All that can be known for certain is, that it is always narrower at the firſt labour, than it is in any future repetitions of this ſtate.

The orifice of the *uterus* is ſubject to ſeveral defects, different from the foregoing; as being againſt nature; and ariſing from the effects of diſeaſes, which have preceded, or do then ſubſiſt. The edges of its circumference are ſometimes hard and callous. This calloſity ſometimes amounts to a ſchirrous hardneſs: ſometimes it is accompanied with painful ſhootings; and is, conſequently, then become carcinomatous, or on the point of being ſo. Sometimes alſo, the cancer is open and ulcerous; ſometimes there are ulcerous excoriations, or ſimple ulcers, without any cancer; and, laſtly, ſometimes theſe diſorders may extend themſelves over the whole of the circumference of the orifice, or may occupy only a part of it.

All theſe faults of the orifice, render delivery more difficult, laborious, and painful; though it will be in proportion to the degree and extent of them. They often appear likewiſe in the orifice; becauſe the *uterus* itſelf is affected with

them.

them. When, however, they are known; every thing ſhould be prepared to put in execution all the dexterity, and ſkill poſſible, to aid the delivery, and to collect the greateſt ſhare of patience; becauſe the delivery makes a ſlow progreſs, if retarded by theſe bad diſpoſitions of the *uterus*. When theſe faulty ſtates of the orifice of the *uterus* are early known, there is opportunity to remedy them in ſome degree. The means of remedy may be all reduced, nevertheleſs, to the application of relaxants, and emolients, by adopting the methods which have been directed above, in the firſt article of this chapter.

IV. The natural ſite of the *uterus* is, to be directly in a right line with the *vagina*, without inclining towards either ſide. This poſition is advantageous to the coming forth of the child; which paſſes then of itſelf, without aſſiſtance, from the orifice of the *uterus* into the *vagina*. There is a certainty of this poſition of the *uterus*, when the orifice anſwers to the middle of the *vagina*, at an equal diſtance from all the points of its circumference. But unhappily this poſition, though natural, is not common nevertheleſs. The *uterus* has often a bias to the right, or the left; and, more frequently, backwards or forwards. The child, in ſuch caſe, in coming out of it, cannot go in a ſtraight direction into the *vagina*, but forces againſt ſome of its edges, where it is ſtopped, at leaſt, if due ſkill be not exerted to guide, and put it in its proper road.

This oblique poſition of the *uterus*, is eaſily diſtinguiſhed, by examining the place of its orifice. For the *uterus* always inclines to the

ſide oppoſite to that towards which its orifice is turned. Thus, if the orifice lye on the right ſide of the *vagina*, the *uterus* inclines to the left: and the ſame of all the other poſitions.

In the preceding chapter, the cauſes which render the poſition of the *uterus* oblique, have been pointed out; and below will be found, *Book* IV. *Chapter* 1, the means of remedying the inconveniences of it in delivery.

V. The greateſt part of unmarried women, even when really pregnant, deny their being ſo: though the ſwelling of their belly accuſes them of it: and to elude the truth, which the bigneſs of their belly declares, they pretend to be dropſical. The ſigns which diſtinguiſh pregnancy from a dropſy, even of the *uterus*, may be ſeen in the *Treatiſe on Diſeaſes of Women*, *book* XI. *chap.* vii. § 4. The touching the *uterus*, which is ſpoken of in that chapter, is ſufficient for this diagnoſtic; at leaſt, after the third month. Nothing more is neceſſary for that, than to introduce two fingers, well greaſed, into the *vagina*, up to the orifice of the *uterus*, and at the ſame time, preſs the other hand flat on the *fundus*, which in three months time reaches up to the bones of the *pubis*.

Then, by puſhing the *uterus* alternately, higher or lower, it is eaſily perceived, whether or no, it encloſes a round reſiſting body. But whatever may be the ſagacity of the examining perſon, it is not to be diſtinguiſhed whether the reſiſting body be a *fœtus*, a *polypus*, or a polypox, excreſcence of the *uterus*. To make a deciſive judgment, it is neceſſary to feel the child ſtir: and this proof may be had after three months and a half of the pregnancy, if the *uterus* be a little

little preſſed, or heaved ſlightly. I have ſeen girls, who the moment they perceived the motion of the child in this examination, coughed ſtrongly, to hinder, by the contractions of the muſcles of the *abdomen*, this motion of the *fœtus* from being felt: but beſides, that the trick itſelf condemned them, they were deſired to hold their cough; and the child, which had been agitated, continuing to move itſelf, furniſhed a ſatisfactory proof of the point required.

VI. The manner of touching is very eaſy. The midwife muſt have her nails cut ſhort, ſome time before; in order that they may be even, and without pointed corners. She ſhould greaſe the fingers ſhe uſes, with freſh butter; and chooſe that hand which will be moſt convenient, according to the ſide on which ſhe is, with relation to the perſon whom ſhe is to examine. This examined woman muſt be laid on her back, upon a bed, her buttocks raiſed a little: and after having made her bend her knees, ſhe ſhould be covered with her petticoats, or the bed-cloathes, if ſhe be in bed: the two fingers muſt then be gently introduced into the *vagina*; and in introducing them, the ſtate of the parts muſt be examined. The ſame examination may be alſo made, when women are ſtanding; and ſometimes this poſture is more commodious; becauſe the *uterus* bears downwards, and meets the fingers. Some adviſe the taking a clyſter before the examination, if the perſon be coſtive; but there appears to be very little occaſion for it.

CHAP. V.

Of the changes, which happen to the ſituation of the child; and the ſtate of the uterus, *at the approach of the labour.*

WE have ſeen, in the preceding chapter, that the reſpective lightneſs of the parts, above the navel, compared to thoſe below, obliges the *fœtus* to keep its head high, and its feet low, in the after-birth. This poſition continues the whole pregnancy: and it is equally convenient for the child, which is eaſy in this poſition; and for the mother, who bears it with leſs trouble, when it lies ſomewhat high.

But this poſition, ſo uſeful during pregnancy, is not equally advantageous for delivery: to make a proper diſpoſition for which, it is neceſſary that the child, when the time approaches, ſhould then, by an admirable mechaniſm, change it. The lower and upper parts of the body of the child, both as to the fleſh and bones, grow, during pregnancy, in an equal and uniform manner; which admits of no difference in their reſpective weight: but it makes other changes in the upper parts, that deſtroy the *equilibrium*. The liver, which is almoſt nothing in the *embryo*, acquires, during pregnancy, a conſiderable ſize and weight. The lungs, which are ſcarcely to be diſtinguiſhed in the *embryo*, and were only little balls of jelly, having grown in the pregnancy, are become compact and firm; that is, in a condition to bear the action of the air, which they are ſoon to breathe: the cavities of the ears, and noſtrils, which were very large

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in the *embryo*, are conſiderably contracted, by the growth of the bones which formed them, and have leſs vacuity: the orbits of the eyes are filled by the growth of the eyes, incloſed in their cavities: the gums of the teeth are grown in their ſockets; and make a new increaſe of weight there: and, laſtly, the *cerebrum* and *cerebellum*, which were, in the *embryo*, only a thin and ſpongy jelly, have gained a due ſize and conſiſtence for performing the functions to which they are deſtined, and conſequently weigh much more.

All theſe cauſes, which are combined at the end of pregnancy, make the upper parts of the child weigh more at that time, than the lower: and the upper parts, therefore, muſt, by the invariable laws of hydraſtatics, ſink, and make the lower parts riſe; and entirely change the poſition of the child. This *turning*, or, as it is called in French, the *culbute* of the child, ſhews the approach of the labour; and precedes it a greater or leſs number of days, according as the progreſſions of the child are more or leſs quick.

If the poſition, in which the child was, be obſerved; that is, the body bent forwards, and the head inclined the ſame way; it will be eaſily comprehended, that in turning, the head muſt firſt tumble forwards on the neck of the *uterus*, oppoſite to its orifice; the trunk follow; and the lower extremities riſe to the *fundus* of the *uterus*. It will be underſtood, at the ſame time, that the head of the child, which looked forward before toward the belly of the mother, will look backwards, in its new ſituation, towards the *os ſacrum*; that is to ſay, that the

child will be in a poſition directly contrary to that, in which it has been till this time; but which is become neceſſary, in order to the proper diſpoſition for delivery.

II. This diſplacing of the child, changes the form of the belly of the mother. The child, fallen upon the neck of the *uterus*, neither takes up by its head nor trunk, which have a conſiderable magnitude, the cavity of the *fundus* of the *uterus*: but its feet, which have only a ſmall magnitude, are contained in that part. The *uterus* is no longer ſo much filled; the belly ſettles; and all the weight of the child bears upon the haunches of the mother, and hinders her from walking ſo freely as before. The child, nevertheleſs, uneaſily conſtrained in its new poſture, takes advantage of the power of extending its legs; and, kicking, ſtrikes againſt the inner ſurface of the *uterus*, and cauſes ſlight pains; diſtinguiſhed, in French, by the name of *Mouches* (and in Engliſh called *falſe pains*): which are the fore-runners of labour, that may be concluded to be more or leſs near, as the pains are more or leſs ſtrong or frequent.

III. Delivery advances gradually by theſe means. The head of the child, by weighing on the neck of the *uterus*, enlarges it; and, by compreſſing the blood and lymphatic veſſels which are diſtributed there, occaſions a diſcharge of *ſerum*; that mortifies the ſubſtance, renders it œdematous, and diſpoſes it to be more eaſily diſtended. This œdematous ſwelling, which precedes labour, is ſometimes ſo great, that it reaches to the *vulva*. In proportion as the ſubſtance in the neck of the *uterus* gives way, and diſtends, the child deſcends more and more, puſhed

puſhed by the efforts it makes, in ſtretching itſelf by the hold, which its feet have againſt the *fundus*; and by the contractions of the *uterus*, that it excites by kicking; and thus, at length, makes its way to the interior edge of the orifice of the *uterus*; which muſt be conſidered as aſſigned, by the author of nature, to put in motion, and a ſtate of excitation, all the parts that concur to produce delivery.

The motions of this kind, excited by the action, irritation, or titillation, of any determined part, and known under the name of *ſympathetic motions*, are common in the body. It is thus, that a little tobacco, put into the noſtrils, excites ſneezing: that the effect the ſtomach has upon particular parts, cauſes vomiting or hiccough: that the action of ſmoak, or of the trachial humour on the *bronchia*, produces coughing, *&c.* It is thus, likewiſe, that the action, bearing down, and irritation, which the head of the child makes, when come to this place of the orifice of the *uterus*, puts it into a ſtate of contraction, and produces delivery. At this time, the radious fibres, that ſurround the orifice of the *uterus*, contract themſelves, and dilate the orifice: the muſcular fibres of the *uterus*, and particularly the circular fibres of the *fundus* of it, go alſo into contraction; and, puſhing the child towards the orifice, make it force its paſſage out. Then, alſo, in the more difficult labours, the diaphragm, and the muſcles of the *abdomen*, come in aid; and, by contracting themſelves ſimultaneouſly, accelerate the delivery. Laſtly, at that period, if the action of all theſe cauſes be combined, the delivery is happily performed, when no other impediment ariſes to it.

IV. The greateſt difficulty which the child finds, is at the orifice of the *uterus*: but this paſſage, being ſoft and relaxed, gives way at laſt. All that is neceſſary is, to hinder the efforts of the child and the *uterus*, when too violent and too often repeated, from cauſing cracks in the edges; which might be of bad conſequence: and the midwife muſt take care to prevent this accident, by not haſtening the delivery; by greaſing the paſſage with freſh butter; by aſſiſting gently to dilate it; and by avoiding cautiouſly not to do herſelf, through aukwardneſs or hurry, the miſchief ſhe would prevent.

As ſoon as the head of the child has paſſed the orifice of the *uterus*; and the ſhoulders are within it; the delivery is thought to be effected: and indeed with reaſon. For neither the *vagina*, nor the *vulva*, make much reſiſtance to it. It happens, ſometimes only, when it has been neglected to provide againſt ſuch an accident, that the head coming out obliquely, and bearing too much on the hinder part of the ſide of the *coccyx*, tears the partition, or *perinæum*, which ſeparates the *vulva* from the fundament; which cauſes a great inconvenience. But this is rare; and proceeds generally from the miſmanagement of the midwife.

At firſt, after the coming out of the child, the *vulva*, *vagina*, and orifice of the *uterus*, form a kind of large and continued canal; thro' which the midwife may eaſily introduce her hand, being firſt well greaſed with butter, even into the *uterus*, to ſeparate the after-birth, if it adhere; to extract it, if it be looſe; and to take away the lumps of coagulated blood, if there be any. But theſe parts contract again ſo ſoon, by

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their elaſticity, that it would not be poſſible, a ſhort time afterwards, to paſs the hand without much trouble, or cauſing great pain.

CHAP. VI.

Of the preparation neceſſary for delivery.

I. ONE of the moſt important articles, and for which even preparation ſhould be made beforehand, is, to *determine the manner in which the women ſhould be placed, in order for delivery.*

The women were formerly made to ſtand on their legs, the higher part of the body leaning on, and ſupported by, a table, with their legs placed aſunder; and they were thus delivered backwards. I do not know, whether or no this uſage prevails any where, even in the country, at preſent: but it is a long time ſince it has been aboliſhed in all great towns.

In the place of that, they ſubſtituted a labour-chair, made ſloping in the fore part; and this is yet uſed in ſome of the provinces; eſpecially in the country, or for women in low life. But no ſuch thing has been done for a long time in *Paris*.

There was afterwards employed, for a conſiderable period, a *lit de travail*, or labour-bed, made like a common bed for ſleeping; with this difference only, that it was made to move upon an axis, which was under the middle of the bed-ſtead; by which means they could make it riſe or fall, either towards the head or feet; or keep

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it in an horizontal poſition, according to the occaſion: and it was fixed in the ſituation required, by the help of a pin.

This bed was narrow, to give more liberty for the midwife to act; and covered with a mattraſs, ſtuffed pretty hard with wool, to hinder the woman in labour from ſinking too much into it. There was, at the bottom, a croſs bar, againſt which the woman might thruſt her feet; and, at the top, two handles, one on each ſide, which ſhe might graſp in the efforts.

This bed was very convenient: principally, becauſe they could raiſe or lower, at will, and without trouble, the head and ſhoulders of the woman, according as the ſtate of the labour demanded either of thoſe ſituations, for the reaſons we ſhall ſee below. This bed, nevertheleſs, commodious and uſeful as it was, is at preſent laid aſide.

There is conſequently a neceſſity at preſent, to deliver all women, either upon a long common chair, or in their own bed. This manner of delivery is more troubleſome to the midwives, and more inconvenient to the women in labour, when it is done in their bed: becauſe the bed is always very much tumbled and fouled; and there is a great deal of pains required to make it again, when the labour is over, and to put the lying-in woman decently into it. But a woman would have the vapours, if ſhe ſaw a labour-chair brought into her chamber: and this reaſon has determined againſt the uſe of any ſuch.

II. At the approach of the labour, the *vulva*, *vagina*, and orifice of the *uterus*, muſt be anointed with

with freſh butter. They ſhould be alſo fomented with an emollient decoction of *mallows*, *marſh-mallows*, *bears-breech*, *linſeed*, &c. if any hardneſs be found there; or, what is more efficacious in ſuch caſes, they ſhould be expoſed to the warm vapour of the decoction; which muſt be placed under a perforated chair, on which the woman, who is to be delivered, muſt ſit.

III. At the coming on of the firſt pains, it is proper to give one or two emollient clyſters, with freſh butter and oil of ſweet almonds; or even ſuch clyſters as are purgative, with mercurial honey, or lenitive electuary, if the belly be bound; in order to empty the *rectum*. For the ſame reaſon, to empty the bladder, the woman, who is to be delivered, ſhould make water: and, if the labour be long, the ſame ceremony ſhould be repeated more than once: becauſe, by emptying thus the *rectum*, and bladder, the paſſage of the child is facilitated.

IV. There is no occaſion to remind the midwife, to take away any ring the woman may happen to have upon her fingers. There are none ſo ignorant, as not to know, that it is a neceſſary precaution in labours. It were to be wiſhed, that the midwife had a little hand, and long fingers: but it is an advantage, that nature alone gives; and which ſhe denies to ſome. At leaſt, however, it is proper, that they, who deſign to follow this profeſſion, ſhould preſerve, with care, the flexibility of the fingers, by avoiding all kind of work, which may render them ſtiff.

V. As to bleeding; if the woman to be delivered, have not been let blood in the courſe of preg-

pregnancy, or but in a ſmall degree: or if ſhe be young, and have a full pulſe, it will be well to bleed her in the beginning of the labour. In the contrary caſes, it is proper to wait till the circumſtances of the labour, or the accidents which may come on, give occaſion to have recourſe to it.

BOOK II.

Of natural deliveries; where the child preſents itſelf in a right poſition.

Theſe deliveries are of two kinds. In the one, the child preſents itſelf with the head foremoſt: in the other, with the feet. We ſhall examine, in this book, theſe two kinds of delivery, in all the variety of caſes that are likely to happen.

CHAP. I.

Of the natural deliveries, that are of the firſt kind; where the child preſents itſelf with the head firſt.

THE natural deliveries of the firſt kind, include thoſe which are attended with three circumſtances. 1. That the child preſent itſelf with its head alone: in which manner it can beſt force and open the paſſage. 2. That the face be turned downwards. 3. That its direction lie in a right line, in ſuch manner, that the crown of the head anſwer exactly to the orifice of the *uterus*, and can eaſily enter it.

Theſe three circumſtances are the neceſſary conſequences that the fall of the child, when it

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is not rendered irregular, produces in the ſituation of it, towards the ninth month. This kind of labour, therefore, though it requires theſe three circumſtances to be combined, is the moſt common of all; and, according to the general opinion, is even the only one, that is natural.

I. In this kind of labour, as well as in all others of which we ſhall treat below, it is proper to diſtinguiſh four different periods; in order to point out the different objects, to which the midwives muſt attend. Theſe periods are, the prelude to the labour; the beginning; the heighth; and the end, or the delivery.

1ſt. In the prelude, the woman to be delivered feels ſome ſlight pains, cauſed by the motions of the body of the *fætus*, or of its feet and elbows, called *falſe pains*; and ſometimes in French, *des mouches*. Theſe pains are more or leſs lively, frequent, and long, according to the briſkneſs of the child.

2dly. Sometimes, when theſe pains are pretty ſtrong, they bring on contractions of the *uterus*; that is to ſay, ſome efforts towards delivery: but theſe efforts are neither regular, nor ſupported; and conſequently not effectual.

3dly. The child appears to be deſcended entirely below; and unexperienced women imagine it is going to fall.

4thly. The orifice of the *uterus* begins to open, by the action of the child on it; or, to ſpeak more properly, to gape: and there flows from it, in ſome caſes, a little milky *ſerum*, which was contained between the *chorion*, and the *uterus*.

Women

Women who are young, fearful, and have no experience, are alarmed at theſe ſlight pains; as being indications of the labour's being nearer than it really is: but this does not happen to thoſe who are leſs timid; and eſpecially ſuch as have had children before.

II. The beginning of labour is ſhewn by ſigns more certain.

1ſt. The pains are acute, frequent, ſupported, and accompanied by proportionable efforts, or throws; which evince, that the child is agitated in a lively manner in the *uterus*; and ſtruggles forcibly to get out.

2dly. Theſe efforts tend downwards, towards the *vagina*; and gradually force the orifice of the *uterus* to open itſelf abſolutely; and to dilate ſufficiently, to ſuffer the top of the head of the child to come out: and then it is ſaid (by the French), that the child *couronne*, meaning in Engliſh, *crowns*.

3dly. At this time, as the head of the child does not yet entirely ſtop up the orifice of the *uterus*, the waters of the *amnios* glide through by its ſides; and puſh in before them that portion of the coats, which cover the head of the child, and form there, as it were, a bag full of water, that deſcends into the *vagina*. It is then ſaid, that the *waters are formed*.

4thly. The waters appear under two forms; which it is neceſſary to diſtinguiſh. Sometimes they are *narrow*, and *long*: and ſometimes they are *broad*, and *flat*. They are *narrow*, when the orifice of the *uterus* is but little opened: becauſe the broadneſs of them always correſponds with the degree of dilatation of it; which is, as it were, the baſe. They are at the ſame time *long*; becauſe

cauſe the head of the child, not having entered the orifice, nor cloſed the paſſage, the waters of the *amnios* continue to fall into the bag; and lengthen it more and more. On the other hand, when the orifice of the *uterus*, opens eaſily, and the head of the child gets in, or at leaſt, the top of it, the waters are *broad*: becauſe the head of the child hinders, that much ſhould flow out; and the little which does paſs, muſt of courſe, become flat, as the bag becomes larger.

The ſecond period of labour is ſometimes long, when the pains and the arteries are weak and ſlow; or when the obſtacles which the child meets with, on account of any fault in the orifice of the *uterus*, are great. From whatever cauſe the difficulty comes, the labours, of which the beginnings are long, are generally difficult and hard. This may, nevertheleſs, admit of ſome exception in timid and unexperienced women, who reckon the beginning of labour too early.

III. Every thing is in action, in the height of the labour; and it is what, indeed, ought to be properly called the *labour*. The child is agitated in a lively manner; the *uterus* contracts with force; the diaphragm and the muſcles of the *abdomen*, puſh ſtrongly downwards; the pains are almoſt continual; and the efforts anſwer to the pains; and bear down without remiſſion.

2dly. Theſe ſeveral combined cauſes, haſten the dilatation of the orifice, which opens at laſt, ſufficiently, to let the head of the child paſs. As ſoon as it is within, as far as the ears, that is to ſay in the whole extent of its magnitude, it is ſaid *the child is in the paſſage*.

3dly. Towards this time, the waters break: that is to ſay, that the elongation of the coats in the form

form of a bag, which contains them, is torn; and ſuffers them to run out. This is what they call *the firſt waters*. As the head of the child advances into the paſſage, and the coverings, which are alſo in it, do not advance equally, the waters contained in this bag, in conſequence of being preſſed by the head of the child, muſt of courſe burſt it. It is proper that it ſhould be torn thus, to open a paſſage to the child; which ſhould not come out incloſed in theſe coats; as it would render its paſſage more difficult and laborious.

It happens, nevertheleſs, ſometimes, that the child comes out incloſed (*a*) in theſe coats, as in a bag, which forms a great ſhapeleſs pocket; from whence it muſt be taken, by tearing the membranes. But this caſe is rare, and occurs only when the delivery is very eaſy.

It more frequently happens, that the child, in coming out, carries off upon its head, a larger, or leſs piece, of its coats; which is called (*b*) a *caul*. This is conſidered as a lucky omen: and it is ſo, in effect, for the child at that time: as it always ſuppoſes a quick and eaſy labour. But the luck ends there, and the notions which have been entertained on this ſubject, ought to have

(*a*) Thom. Bartholin, in actis haſnienſibus, *volum.* II. *obſervat.* 35. *page* 93.

Frederic Ruyſch. *obſervat* 11. *page* 18.

(*b*) Solent pueri pileo inſigniri naturali, quod obſtetrices rapiunt, & advocatis credulis vendunt; ſiquidem Cauſidici hoc juvari dicunter. *Ælius Lampridius in vitâ Antonini Diadumeni.*

Lampridius adds, that the emperor Antonius, ſon of Macrinus, was called, in his youth, *Diadumenies*, that is to ſay, crowned, becauſe he was born covered with ſuch a *caul*, in the form of a diadem; which was conſidered as a preſage of the imperial dignity to which he attained.

been exploded a long time ago. The heighth of the labour is ſcarcely ever the ſame. Sometimes it is ſtrong, ſhort, and pretty ſlight; two or three good efforts being ſufficient for the delivery; and every thing being finiſhed in a quarter of an hour: but at other times, it is long and hard. There are women who are a long time, in the ſtrongeſt continual labour, before they be delivered. Theſe differences ſometimes come from the child: but more often from the mother.

IV. When the child is in the paſſage, the delivery is near the end. 1ſt. The firſt effort, and even a pretty weak one, makes the head come out; and puſhes the ſhoulders into its place. As ſoon as the ſhoulders are paſſed, the reſt of the body, which tapers, comes out, as one may ſay, of itſelf.

2dly. The after-birth, or ſecondine, which comprehends the coats, and the *placenta*, comes away generally with the child; becauſe the efforts of the labour, that is to ſay, the contractions of the *uterus* have ſeparated the *placenta*, or at leaſt, ſo much looſened it, that nothing more is required to make it follow, than to draw it away gently by the cord.

3dly. When the head of the child has paſſed, as the neck does not fill the orifice of the *uterus*, the waters which remain yet in the *amnios*, behind the child, begin to eſcape; but they do not eſcape entirely, till after the coming out of the ſhoulders. Theſe are the *ſecond waters*, or to ſpeak more properly, *the true waters of the delivery*; of which, the impetuous ruſhing out, puts the finiſhing ſtroke to the bringing away the child.

4thly:

4thly. At the ſame time the milky humour, which drains from the vermicular, or lactiferous veſſels, eſcapes, alſo, betwixt the *uterus* and the *chorion*. It will be abſolutely pure, if the *placenta* adhere yet to the *uterus*; or mixed with blood, which flows from the cecal veins, if the *placenta* be wholly, or in part, ſeparated: and this is called the *cochia*, or vulgarly in Engliſh, the cleanſings, which continue to run for ſome days after the labour.

In each of theſe ſeveral periods of the labour, the midwife has different obſervations to make; and aſſiſtance to give.

I. In the prelude to the labour, 1ſt, ſhe muſt examine the plate of the oriſice of the *uterus*, to judge, if it be yet begun to be opened; and if any humour be already diſcharged from it; that ſhe may diſcover whether the labour be near or no.

2dly. She muſt conſider likewiſe, whether the pains be true or falſe. The true pains ſeize the reins; and extend generally to the navel: which ſhows, that they come from the *fundus* of the *uterus*; from whence they reverberate on the neck of the *uterus*, and the *vagina*. They are always attended with, or followed by, a dilatation of the orifice. If one of theſe two circumſtances, or much more, both of them be wanting, it is a proof, that the pains are falſe.

3dly. It muſt be diſtinguiſhed alſo, whether the pains be *effectual* or *ineffectual*. The *true* pains are always effectual; and preſage the labour to be near, when they are acute, quick, and frequent. But the *falſe* pains are always ineffectual; and give room to apprehend a long

and difficult labour; particularly if they be weak, ſlow, and rare.

4thly. But in every ſtate, it is requiſite, that the midwife ſeem eaſy: and that in encouraging the woman in labour, by her words, ſhe keep up her ſpirits, likewiſe, by the appearance of her countenance.

II. In the progreſs of the labour, it is proper to examine; 1ſt, if the orifice of the *uterus* be flat, thin, ſoft, dilatable, and already ſufficiently open: which promiſe an eaſy delivery.

2dly. If the opening of this orifice augments from moment to moment; which gives hopes of a quick delivery.

3dly. If the waters be broad and flat, and at ſhort intervals grow broader and flatter; which ſhews the progreſs of the dilatation of the orifice of the *uterus*.

4thly. If the child preſent itſelf by the head; which is diſtinguiſhed by the roundneſs; which is a proof, that the labour is natural.

In this period, the midwife has not much to do. She may, nevertheleſs, a little aſſiſt the dilatation of the orifice. For this purpoſe, ſhe muſt introduce into it, two of her fingers, the fore and the middle, well greaſed with freſh butter, and held together. She muſt open or ſeparate them afterwards, gently; and, by this means, ſhe will dilate the opening of the orifice; particularly if ſhe repeat this operation in different directions; and introduce the other fingers, alſo, to aid the effect.

III. In the height of labour, the midwife muſt be attentive principally to theſe objects.

1ſt. She

1ſt. She muſt continue to aid the dilatation of the orifice of the *uterus*, by the means we have juſt mentioned.

2dly. She muſt order the woman in labour to regulate and keep up her pains and efforts; that is to ſay, to cry out leſs, to hold her breath, to force downwards, and to perſevere in this ſtate as much as ſhe can.

3dly. When the head of the child is within the paſſage, as far as the ears, it will make the waters flow, by breaking the coats, or the bag which contained them. The bag is generally torn of itſelf, about this time, and it is good to wait till it does thus tear of itſelf; at leaſt, unleſs it be very long before; and that an impediment may ariſe from it, to the paſſing out of the child. In general, it ſhould be avoided, to make the waters flow too ſoon; becauſe a dry delivery is always difficult.

4thly. The coats being torn, it is of conſequence to know well again the ſituation of the child. If the head preſent itſelf ſtraight, with the face downwards, and alone, the concurrence of theſe circumſtances, evince a natural labour of the firſt kind. If any of them be wanting, and ſtill more, if ſeveral, an unnatural delivery, or one of the ſecond kind of the natural, muſt be expected.

5thly. When the head of the child is in the paſſage, if any obſtacle appear to hinder its progreſs out, the midwife ſhould introduce two fingers of each hand, well greaſed with butter, by the ſide of the head of the child, up to its ears; againſt which ſhe muſt fix them, and then with the help of a good pain, ſhe ſhould draw it gently, by moving it to the right and left, to

render it more eaſy for the ſhouldets to get in. After the ſhoulders have paſſed, the child will come out very ſoon; and the delivery will be preſently finiſhed.

6thly. After the child be come forth, it ſhould not be neglected to examine, if there be another, or any mole. In the firſt caſe, the delivery of the ſecond child muſt be aſſiſted: and, in the other, it is proper to extract the mole, by the method that will be explained hereafter.

IV. It remains, nevertheleſs, yet, to take away the after-birth. In order to this, 1ſt, if it do not come out of itſelf, the midwife ſhould place the child on its ſide, upon her knee, with the face turned towards her, to hinder the *cochia* from choaking it, when it begins to breathe: and ſhe ſhould pull the cord ſoftly, to facilitate the paſſing out of the after-birth: which will readily come, if it be already ſeparated, as it is moſt generally. But if it adheres yet, by any corner, ſhe muſt complete the ſeparation, by ſhaking it gently, by means of the cord; and drawing it towards her obliquely, ſometimes in one direction, and ſometimes in another.

2dly. After the coming out of the after-birth, care muſt be taken to examine well if it be intire: which is eaſily to be known. If it be not ſo, the midwife muſt introduce the fore finger of the left hand, well greaſed, into the *uterus*, before it be cloſed, and uſe it to cleanſe away, and draw out, what may have remained behind: as alſo the clots of blood, if there be any.

3dly. But if the *placenta* reſiſt too long, ſhe muſt cut the cord between the two knots, in the manner which will be explained below; and after being freed from the child, which ſhe commits

mits to the care of the nurſe, ſhe muſt endeavour to ſeparate the *placenta*, by the method hereafter directed.

We ſhall conſider, alſo, in two particular chapters, the detail of what is proper to be done, as well to the lying-in-woman, when ſhe is delivered; as to the child, when it is born.

CHAP. II.

Of the labour of the ſecond kind, where the child preſents itſelf by the feet.

IT will, without doubt, appear extraordinary, to ſee the delivery by the feet, put in the number of ſuch as are natural. But I hope, that the ſurprize will ceaſe, when the reaſons have been examined which have determined me to it; of which I ſhall exhibit the particulars in the following chapter. I propoſe, in this, only to ſpeak of the cauſes of ſuch a ſituation of the child; the means of diſtinguiſhing it; and the manner of delivery, when the child preſents itſelf with the two feet foremoſt, and there is a certainty, by the ſituation of the feet, that the face is turned downwards: which muſt be conſidered as ſo many eſſential circumſtances, to a natural delivery of this kind.

I. Inſtead of preſenting the head, the child preſents the feet only, becauſe it has not turned, or at leaſt, not regularly: which happens from ſeveral cauſes.

1ſt. From the ſmallneſs of the head of the child; the weight of which does not ſufficiently counterpoiſe that of the feet, to procure the complete turning.

2dly. From the weight of the *abdomen*, in a dropſical child, which counter-balances the head in a ſufficient degree, to prevent the turning, or at leaſt, to render it imperfect.

3dly. From the largeneſs of the body of the child; which, by filling the *uterus* too much, impedes its own motion, and deprives it of the liberty of turning, or at leaſt, of turning properly.

4thly. From the ſmallneſs of the *uterus*, which does not therefore diſtend ſufficiently, nor give room to the child, to make the turn freely and perfectly.

5thly. From the preſence of two twin children, who, by compreſſing and impeding each other, ſpoil the freedom of their motion.

6thly, and laſtly. From the want of a ſufficient quantity of water in the cavity of the *amnios*, to ſuſpend the child; and give it a due facility in turning.

To which muſt be added, 1ſt. The two great obliquity of the *uterus*, inclining forwards, backwards, or towards either ſide: the conſequence of which is, that, though the turning be made, the head of the child, inſtead of falling on the orifice, falls into the inclined part of the *uterus*, which is the loweſt; and thence occaſions the feet to preſent themſelves to the orifice.

2dly. A thouſand other fortuitous accidents, as a fall, a falſe ſtep, a jump even though ſlight, a ſhake ſomewhat violent in a carriage, *&c.* that may change the firſt ſituation of the child

child on which it might have been well placed; and put the feet where the head was before.

II. It is the duty of a ſkilful midwife to know early, and, if ſhe can, even at the beginning of the labour, if the child preſent itſelf by the feet; for that is of uſe in regulating her conduct.

1ſt. This may be conjectured, even before the *uterus* opens, or at leaſt, before it be enough ſo to introduce the finger, by perceiving, that its orifice, which advances into the *vagina*, does not form a round, equal, and pretty large body, as it always does when it is the head of the child, which puſhes it forwards: but, on the contrary, a ſmall unequal, and irregular body, ſuch as the feet may occaſion.

To this conjecture, may be added another, that the nature of the pains and efforts furniſhes, which are always weaker, ſlower, and more languid, when the child preſents itſelf by the feet, than when by the head. In this latter ſituation, the feet, which are at the *fundus* of the *uterus*, by moving and kicking, ſolicit lively and frequent pains, and proportionable efforts: whereas, when the feet are at the orifice, the head, which is at the *fundus*, remains there paſſively, and either makes no impreſſion on it, or only ſuch as is very weak.

2dly. It may be known in a more certain manner, that the child preſents itſelf by the feet, when the *uterus* is open enough to admit of introducing one or two of the fingers, even before the coverings are torn: becauſe the feet may be eaſily diſtinguiſhed through them; and known from any other part. Beſides the waters, which advance into the *vagina*, are, in this

this caſe, very long and narrow. *Long*, becauſe, as the orifice of the *uterus* cannot be entirely ſtopped up by the feet, as it is by the head, the waters of the *amnios* are at liberty to flow down in great quantity: and *narrow*, becauſe the orifice being dilated only in a ſmall degree, and weakly, the breadth of the waters, which anſwers always to the dilatation of the orifice, can only be very ſmall.

3dly. A judgment perfectly certain, nevertheleſs, cannot be made on the matter, till the coats be torn; and the naked feet can be diſtinguiſhed without any thing interpoſing. But it is not proper, to wait for this abſolute certainty, in order to act; for as ſoon as all the ſeveral grounds of preſumption enumerated combine to prove, that the child preſents itſelf by the feet, it is neceſſary, if the coats be not torn of themſelves, to tear them as ſoon as may be, to prevent the accidents to which this ſituation is expoſed, if things be left to nature only. It is true, that this produces not only the diſcharge of the firſt waters, which hang in the *vagina*, but even of thoſe that are yet in the *uterus*; which may do ſome harm to the facility of the delivery. But this inconvenience muſt yield to the neceſſity there is of doing quickly, what is requiſite to be done in this kind of labour; which cannot be performed till the coverings be torn, as we ſhall ſee below. It is ſufficient the midwives be informed, that when they have taken this meaſure, they muſt not rely ſolely on the efforts of nature, as they may do when the child preſents itſelf by the head; but they muſt aſſiſt them, and perform this delivery as quickly as they can, in order to have the benefit of the moiſture,

which

which remains in the coverings, and in the paſſage.

4thly. The ſuccour which the midwife may give in the firſt ſtate, is confined, to the aiding the dilatation of the orifice of the *uterus*. In order to this, ſhe muſt introduce the fingers into the orifice, after having well greaſed them, if that can be done without too much violence. But if the ſtate of the orifice do not admit it, ſhe muſt endeavour to dilate it gently with one finger, if only one can be put in. But the effect will be much greater, when two or three fingers held cloſe together, or even all the four and the thumb, can be introduced, becauſe by ſeparating, or opening them, the orifice of the *uterus* may be dilated in proportion, and in all directions.

5thly. By this means, the ſituation of the child may be certainly known. If it preſent the two feet, an advantage is gained: but no meaſures muſt be taken in conſequence of that, till it be certainly known they both belong to the ſame child. For it ſometimes happens, that they belong to two different children; which have, in ſome inſtances, been killed, by proceeding in the endeavour to deliver them both at the ſame time.

In order to diſcover this, the conformation of the toes, and the ſituation of the great toes, are generally examined: by which, it is eaſy to diſtinguiſh, that they belong one to the right, and the other to the left foot: whence it may be concluded, that they are the feet of the ſame child. But, however ſtrong the preſumption may be, that is founded on this examination, it ought not to be wholly truſted to in a matter of ſo much importance. It

is proper, before the delivery be urged, to be very ſure, that the two feet belong to the ſame body; and in order to that, to introduce the hand previouſly, well greaſed, along one of the two legs and thighs, till it be found, they are united to the ſame body.

6thly. But if, on the contrary, the child preſent only one foot, as often happens, it is proper to endeavour to find that which is wanting, after having ſeen, by the examination of the other, whether it be the right or left; in order to direct the ſearch that is to be made. It was formerly cuſtomary, in order to ſecure the diſtinguiſhing the foot that had preſented, to tye, in a looſe manner, a ribban, or even a thread, to it.

This precaution is but little uſed at preſent, and it is indeed, little neceſſary: but, as there is no inconvenience in it, the midwife is not to be blamed who employs it.

The finding the foot which is wanting, is never very difficult. Sometimes the knee of the limb to which it belongs, is found oppoſite to the orifice; and then it is eaſy to bring it back. At others, the knee and foot are further off: but, by binding the finger, and ſearching round the orifice, they may be found, and brought to their place. Laſtly, in caſe of neceſſity, the hand, being well greaſed, may be ſlipped along the leg and thigh, up to the joining with the other thigh; from whence, by deſcending again, the leg and the foot that are wanting, will be met with.

To be able to readjuſt the diſplaced foot, it is of conſequence, to hinder that which preſents from advancing too far into the paſſage; becauſe

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in that caſe, it becomes neceſſary to bend much the leg and foot that are to be brought back; which endangers the breaking them. For the moſt part, therefore, it is beſt to puſh the child a little back into the *uterus*, if it can be done without violence; or, in all caſes, to lower the upper part of the body of the woman, and to raiſe her buttocks by cuſhions, in ſuch manner, that there may be a deſcent from the orifice of the *uterus*, to its *fundus*; which making the *uterus* ſink down into the belly, and the child into the *fundus* of the *uterus*, gives all the liberty which is wanted, to bring back the foot without any violence.

When the two feet offer one on each ſide the other, at the entrance of the orifice, or even in the paſſage, it is proper, before any other procedure be had, to be certain firſt, that they belong to one child; and then to employ the means which have been directed above.

7thly. But if unfortunately, one leg of the child get into the paſſage, even to the thigh, it becomes of courſe neceſſary to puſh it back into the *uterus*, by lowering the upper part of the body, and raiſing the buttocks of the woman in labour, as I have ſaid above, in order to ſearch for, and replace the leg and foot, that are wanting; and to put things into that ſtate, in which the delivery may be performed. I know it is ſaid, that there are children who have been born in this ſituation. If it be ſo, it muſt have been where the diſplaced thigh could bend forwards. But beſides that there is no depending thus on the flexibility of the thigh of the child, it is, on all accounts, very imprudent to ſuffer ſuch a labour to go on.

III. When

III. When the two feet offer, and it is certain they belong to the ſame child, the labour may be accounted very forward.

1ſt. There is nothing more to be done, than to take advantage of the offers which the woman herſelf exerts at her own will, for in this kind of labour, there are ſcarcely any other, as has been ſaid above; and to draw gently by degrees, the child, even to the buttocks; which is commonly very eaſy. In order to this, the legs, and afterwards the thighs, of the child, are to be taken hold of: but as they are very lubricous, or ſlippery, and the greaſy hands are apt to ſlide over them, they ſhould be covered with little compreſſes of dry and ſoft linen.

2dly. When the child is drawn out, to the buttock, it is proper to ſee whether it come with the belly and face downwards, or upwards: which may be eaſily known, by the ſituation of the toes and heels.

If the face and belly are downwards, it is the better: that being the poſture to be wiſhed for. But this ſometimes comes in the oppoſite direction: becauſe the regular turnings have not been made; and then it muſt be taken into conſideration, to put the child into ſuch a ſituation, as may moſt conduce to the facility of the delivery.

3dly. To this end, it is proper to place the right hand flat under the reins; and, in proportion as the child comes out, or is drawn forward, to endeavour gently to turn it by the other hand. It is eaſy to ſucceed thus with a living child, becauſe the body of it is firm; but the matter is more difficult with a dead one, the body of which has no elaſticity, particularly with

with reſpect to the neck, which will not yield to the motion that is attempted to be given to it.

4thly. When the child is turned, there remains nothing, but that the delivery ſhould be haſtened, though without precipitation. It was formerly the practice to ſeek for the arms one after another, to place them on the ſides: and it was afterwards thought better, only to bring down one, and to leave the other extended upon the head, where it ſerved to hinder the head from ſtopping in the paſſage. At preſent both are left, and it is the beſt method. The delivery is not, in ſuch caſes, more difficult: and it is the moſt certain method, to prevent the head from being detained in the paſſage.

5thly. Nevertheleſs, as, even with this precaution, there is always reaſon to fear that the head may catch; becauſe the orifice begins to contract itſelf when the ſhoulders have paſt; it is proper, when the child is within as far as the ſhoulders, to adviſe the mother to make one great effort, and to hold it as long as ſhe can; and to take advantage of this effort, to make the ſhoulders paſs, and the head ſucceed immediately to their place, without giving the orifice time to contract.

6thly. But if, notwithſtanding this care, the head of the child ſhould ſtop in the paſſage, it is proper, without pulling, to diſengage it gradually, ſometimes on one ſide, and ſometimes on the other, by ordering the mother to make efforts, and even to take ſome ſternutarus to make her ſneeze; but care ſhould be taken not to put the finger into the mouth of the child, in order to draw the head by it, becauſe that only

only tends, for the moſt part, to diſlocate the lower jaw of it.

7thly. Laſtly, when the child is come forth, the conduct muſt be obſerved, both with regard to the child and mother, that is directed in a particular chapter below.

CHAP. III.

Compariſon of the delivery which is made by the head, with that by the feet.

THE antients have, almoſt all of them, believed, that there was no other natural delivery, but that made by the head: and conſequently, they regarded the delivery by the feet as againſt nature.

The deciſion of Hippocrates on this point is clear. "If a woman (*a*), *ſays he*, be a long time "in labour, it is an almoſt certain mark, that "the child preſents itſelf croſs-wiſe, or by the "feet: but it is better it ſhould preſent itſelf by "the feet." *Si parturiendi dolores detineant, diùque in initendo laboret, is tranſverſus aut in pedes fere exit, in caput autem prodire præſtiterit.* He adds, ſome lines lower, "A delivery is difficult "and bad, when the child preſents itſelf by the "feet; generally fatal to the mother or child, "and often to both." *Grave eſt, ſi in pedes prodeat, et plerumque matres aut puelli, aut ambo etiam perierunt.*

(*a*) De morbis muliebribus, *lib.* I. *textu* 50.

Ariſtotle

Ariſtotle (*b*) ſpeaks in the ſame manner, in more than one place, in his *Hiſtory of Animals*; as well as *Galen* (*c*). But Pliny (*d*) is yet more poſitive. "The delivery, *ſays he*, by which the "child preſents itſelf by the feet, is againſt na-"ture. From whence it comes, *continues he*, "that they call thoſe that were born ſo, *Agrip-*"*pa:*" which expreſſes, in Latin, their difficulty in birth. *In pedes procedere naſcentem contra naturam eſt, quo argumento eos appellavere Agrippas, ut æger partos.* To which may be added, that, in alluding to the manner in which the dead are carried to their graves, he (*e*) eſtabliſhes, as a received maxim, "That the order of nature is, "to enter into the world by the head; and the "cuſtom, to go out of it by the feet." *Ritus naturæ capite hominem gigni, mos eſt pedibus efferri.*

After ſuch authorities, it cannot be aſked, what the ſentiments of the phyſicians, who have lived ſince, are. They have agreed, even with a kind of emulation, to conſider as fatal, every labour by the feet: and this opinion is ſo generally eſtabliſhed, that even, to the preſent, there is ſcarcely any body, who does not deplore the fate of a woman in labour, where the child preſents itſelf in this poſition.

There are, nevertheleſs, ſome, among the ancient phyſicians, who, far from condemning a delivery by the feet, have approved of it: and have even adviſed to reduce, to this ſtate, all the bad ſituations, where the child preſents itſelf by

(*b*) Hiſtor. Animal. *lib.* VII. *cap.* 10 & 13. (*c*) De uſu partium, *lib.* XV. *cap.* 7. (*d*) Hiſtor. naturalis, *lib.* VII. *cap.* 8. (*e*) Ubi ſuprà.

any other part than the head. There may be comprehended in this number, Celſus, Ætius, Paul d' Egina, Avicenna, and others; with regard to whom, what they have ſaid on this ſubject, may be ſeen in the *ſummary hiſtory of the art of delivery.*

There have been, even for a long time, phyſicians ſufficiently intelligent to know, that the delivery by the feet may be eaſy, and even natural; and who have courage enough to declare it. Dole (*f*) is one of the firſt, that I know of, who has dared to aſſert it; and he has been followed by Govey (*g*), Daniel Hoffman (*h*), and a crowd of ſurgeon *accoucheurs*; who have all practiſed this delivery, in every caſe, where the bad ſituation of the child rendered every other kind of delivery difficult, or even impoſſible.

I quote theſe authors with pleaſure, becauſe they ſpare me the embarraſſment of being the firſt to advance this paradox. But I am very ſenſible, I ſhould have advanced it, even though I had been the firſt; becauſe I am firmly perſwaded, that all other things being equal, the delivery by the feet is leſs troubleſome, more eaſy, and as ſafe, as that which is made by the head: and merits, conſequently, to hold, at leaſt, the ſecond rank in natural deliveries. I hope even this ſentiment will be adopted by all others, if the comparative advantages, and diſadvantages, of theſe two kind of deliveries, be well examined and weighed.

II. The advantages, that cannot be denied, to reſult from the delivery by the head, are very

(*f*) Encyclopæd. Medic. *lib.* V. *cap.* 7. *pag. m.* 673.
(*g*) De generatione fœtûs, *pag.* 104, *& ſeq.*
(*h*) *Annotationes in Hypotheſes Goveyanas.*

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great: and there is no room to wonder, that they have been thought deciſive in this point.

1ſt. The top of the head is a kind of battering ram, more proper to open the orifice of the *uterus* than the feet.

2dly. When the child preſents itſelf by the head, it may kick with the feet, which will haſten the dilatation of the orifice: whereas, on the contrary, this help is wanting in the delivery by the feet.

3dly. When the head is come forth, and has paſſed, the reſt of the body of the child paſſes ſoon after without trouble; becauſe the circumference of the upper parts, even that of the ſhoulders, is leſs in children, or at leaſt it is not bigger, than that of the head. But it is quite otherwiſe in the delivery by the feet; where nothing is gained, though the feet be come forth; all the thick part of the body remaining to be paſſed.

4thly. In the delivery by the head, there is no danger that the head will remain in the paſſage, or ever ſeparate itſelf from the reſt of the body: whereas, there is a great danger of this, when the child is delivered by the feet; particularly when the child is dead.

5thly. The greateſt part of the waters are retained in the *uterus*, in the delivery by the head: becauſe the top of it, which ſtops entirely the orifice of the *uterus*, cloſes the paſſage of it. By this means, the waters hinder the *uterus* from contracting; preſerve the humidity and flexibility of the coats; and, by the gradual diſcharge of them, ſerve to lubricate the paſſage, and facilitate the coming out of the child. All theſe advantages are wanting in a delivery by the feet;

where almoſt all the water eſcapes at firſt: becauſe neither the feet, nor legs of the child, can cloſe up the orifice of the *uterus*.

6thly. When the child preſents itſelf by the head, the feet, by kicking againſt the *fundus* of the *uterus*, make lively impreſſions on it; which excite the neceſſary efforts to force out the child: whereas, in the delivery by the feet, the head makes none, or but very weak impreſſions on the *fundus*: whence, in this kind of delivery, the conſequential efforts are wanting.

7thly. When the child preſents itſelf by the head, it has almoſt always the face downwards; becauſe that is the poſture, which the regular turning muſt give it: on the other hand, it is almoſt always upwards, when the child preſents itſelf by the feet: becauſe then it has not turned; or only done it irregularly.

III. The advantages, which the delivery by the feet have over that made by the head, are leſs numerous; but of greater conſequence.

1ſt. In this kind of labour, the *uterus* opens by degrees; and the child, in conſequence of preſenting itſelf by the feet, and coming forwards in this ſituation, makes a kind of wedge, of which the thickneſs gradually augments; and thence produces a continual dilatation in the *uterus*, that is gradual, and almoſt inſenſible: whereas, in the delivery by the head, it is requiſite, that the dilatation of the orifice be immediately urged to the greateſt degree, that it ought to attain.

2dly. In the delivery by the feet there is no trouble, either with the obliquity of the child which preſents itſelf; or that of the *uterus*, which contain it: becauſe, when the feet are come out,

out, it is eaſy to adjuſt the body of the child; and, by adjuſting that, adjuſt to the *uterus* itſelf. Theſe aids are wanting in the delivery by the head; where there is ſcarcely any means of correcting the obliquity of the *uterus*, or the child; and where, conſequently, theſe faulty ſituations become often fatal: as we ſhall ſee below.

3dly. Laſtly, it is only, in the delivery by the feet, that, by laying hold of them, and, afterwards, of the legs of the child, a proper hold may be had, to draw, turn, and guide it: and, by this means, to aſſiſt the woman in labour; facilitate the delivery; and remedy a great part of the inconveniencies: which is not practicable in the deliveries by the head; where the midwife remains paſſive; and can give no help, excepting the attempts ſhe may make, to aid the dilatation of the orifice.

Every thing conſidered, therefore, there is reaſon to ſay, firſt, that the delivery by the feet is leſs painful: becauſe the head, which occupies the *fundus* of the *uterus*, makes no impreſſions on it; or ſuch as are very weak.

2dly. That it is more eaſy: becauſe the orifice of the *uterus* dilates only in a gradual and inſenſible manner: and that the midwife, by gently drawing the child by the feet and the legs, aſſiſts it efficaciouſly.

3dly. That it is quicker: becauſe it is more eaſy to procure this gradual dilatation of the *uterus*, than to ſucceed in diſtending it ſuddenly to the greateſt degree; without recokning, moreover, that the midwife aſſiſts, on her part, the dilatation, by drawing the child gently towards herſelf.

4thly. That it is equally ſafe: which follows from the three preceding propoſitions; and admits of no other doubt, than what ariſes from the danger there may be, that the head may ſtop in the paſſage: But this danger is extremely diminiſhed, ſince it has been practiced, to leave the two arms of the child along the head; eſpecially when care is taken, to turn the child with its face downwards; and not to make the delivery, but in this poſition. Becauſe then the chin cannot catch upon the bones of the *pubis*; and paſſes, likewiſe, without trouble, the curvitude of the *os ſacrum*. After all, the danger there may be, that the head ſhould ſtop in the paſſage, when the delivery is made by the feet, ſeldom happens but in the caſe of dead children; and then, this accident is not to be imputed to this kind of delivery: for it is not practiſed by choice, but pure neceſſity; there being no other means of delivering the mother.

It may then be concluded, *firſt*, that, far from being alarmed, as was the caſe formerly; and even yet in ſome provinces, when a child preſented itſelf by the feet, this delivery ſhould be regarded as advantageous, when it is conducted by a midwife, who knows how to take due precautions for the eaſy coming out of the head; ſuch as have been explained in the preceding chapter.

2dly. That all the children that preſent themſelves by their ſhoulders, hands, back, belly, buttocks, *&c.* muſt be brought to a ſituation for this kind of delivery, without any vain attempt to deliver them by the head: which is always very difficult; not to ſay often impoſſible.

3dly.

3dly. That it muſt be determined to bring back the children, who preſent themſelves obliquely by the head, whether through their own fault, or that of the mother, when it has been unſucceſsfully tried to adjuſt them; and the midwives cannot beſtow too much attention to this point, in order to take their meaſures early, and before the mother and child are exhauſted in the labour; and the inſide of the coats dried, by the diſcharge of the water.

4thly. That all theſe advantages are ſufficient, to make the delivery by the feet regarded, as one that is natural; at leaſt of the ſecond kind.

CHAP. IV.

Of the method of managing women lately delivered.

THE duty of the midwives, with regard to a woman lately delivered, may be reduced principally,

1ſt. To the conduct they muſt obſerve, during the firſt day after delivery;

2dly. To what they muſt do the following day;

3dly. To the means they muſt employ, to get rid of the milk;

I. When the woman is delivered of the child and the after-birth, the midwife ſhould put a warm cloth into the *vulva*, and preſs it moderately, to hinder the cold air from affecting the inſide.

Afterwards, if the labour be made in a great chair, ſhe ſhould order the delivered woman to

be carried to bed; after having made her put on a cloth, folded in ſeveral doubles.

It is requiſite then, after having given her a proper chamber pot for lying-in women, to adviſe her to make water; which the delivered women ſometimes do without any trouble; but at other times have great trouble in doing, when the *vulva* is ſwelled, and makes a ſtrangulation in the extremity of the *urethra*.

In this caſe, and even all others, to relax the lips of the *vulva*, and the entrance into the *vagina*, it is proper to apply to the *vulva* a cataplaſm, made with one or two eggs, beaten up with oil of ſweet almonds, and moderately boiled in *balneo Mariæ*, in form of an omelet: which may be renewed four or five times after, if it be thought right.

There is generally given to women, juſt after their labour, two ounces of oil of ſweet almonds, and an ounce of capillair, beaten together, to moderate the colic: there may be given, alſo, at diſcretion, at this time, ſome good broth; eſpecially if the labour have been long.

Laſtly, after the *uterus* has been emptied ſome hours, the belly of the delivered woman is to be dreſſed. This is done, by putting on the body of the *uterus* one or two compreſſes, of a ſquare or triangular form; and two ſtrait and long compreſſes are placed on the ſides: and the whole is ſurrounded with a bandage moderately ſtrait; but a cloth alone is put over the part.

II. The following days, it is proper to obſerve the quantity and quality of the *lochia*; that is to ſay, of the diſcharge which follows the labour.

Theſe

Theſe *lochia* come from two ſorts of veſſels in the *uterus*. The one ſort is, the cecal veins, or veinous *appendices*, which, during the pregnancy, ended in the *cellulæ* of the *placenta*; and there depoſit the blood neceſſary for the nouriſhment of the *fœtus*: but which, after the delivery, flows into the cavity of the *uterus*. The other ſort is, the lactiferous, or vermicular, veſſels; which conveyed, during the pregnancy, into the *cellulæ* of the *placenta*, a milk intended to nouriſh the *fœtus*: but which, after the delivery, ſuffer it to run into the *uterus* itſelf. Altho' there is, in the *lochia*, a conſiderable quantity of milk, as we have juſt ſaid, it cannot be diſtinguiſhed at the beginning; becauſe the blood is more copious then, and tinges red even the milk itſelf with which it is mixed.

This diſcharge of the *lochia* begins to diminiſh at firſt after the delivery, from two cauſes, which act at the ſame time. The one is, that the *uterus* begins, from the moment of delivery, to contract itſelf from the elaſticity of its fibres; and, by contracting, it contracts the orifices of the cecal veins, or veinous *appendices*, and the lactiferous veſſels. The other is, that the orifices of theſe veins and veſſels contract themſelves, by the particular elaſticity of their coats.

The firſt of theſe two cauſes acts equally on the orifices, as well of the cecal veins, or veinous *appendices*, as the lactiferous veſſels: but the ſecond is much ſtronger in the blood veſſels, which have more elaſticity than in thoſe of the lactiferous veſſels: which occaſions that the orifices of the blood veſſels are ſooner cloſed, and more exactly ſtopped up, than thoſe of the lactiferous veſſels. From whence it comes, that the diſcharge of blood diminiſhes quickly after the de-

delivery; and ceaſes almoſt entirely, about the fifth or ſixth day of the lying in; or even ſometimes the third day.

In proportion as the diſcharge of blood diminiſhes, the milky *lochia* become leſs red; and they become entirely white and milky, when the blood ceaſes to flow. They continue a conſiderable time in this ſtate, becauſe the orifice of the lactiferous veſſels, which ſupply them, have leſs elaſticity; and, in proportion, leſs diſpoſition to contract, and cloſe themſelves. Nevertheleſs, this diſcharge begins to diminiſh the ſecond or third day. It diminiſhes ſtill more about the fourth or fifth day; when the blood has taken its proper courſe: but it does not ceaſe entirely till the twentieth or twenty-fifth day: and it even ſometimes continues till the fiftieth. This depends on the greater or leſs nouriſhment, which the delivered women are admitted to take; but, in a greater degree, on the elaſticity of the *uterus*, or its *lactiferous* veſſels.

The women often evacuate along with the *lochia*, particularly with the white or milky kind, other humours, or heterogeneous matter: as *mucus*, or ſlimy matter, which is ſeparated from the ſubſtance of the *uterus* in women of a viſcid habit: *pus*, which comes from ſome abſceſs, or concealed exulceration: pieces of the *placenta*, or of the after-birth, which had remained behind in the *uterus*, &c. with relation to which, it is of conſequence the midwife ſhould conſult the patient's phyſician.

To judge of the quantity of the *lochia*, it is proper that the midwife, or rather the nurſe, to whom this office is almoſt always given, change the cloth often; particularly in the firſt days.

For,

For, afterwards, it may be reduced to twice a day: which is ſufficient in common caſes.

In changing the cloth, it is proper to take care to foment, every morning and evening, the part, and all the *vulva*, with a warm decoction of barley, either alone, or mixed with a little cow's milk: or, which is more uſually practiſed, with a ſmall decoction of linſeed and chervil: to which may be added a little honey of roſes, if there be any choppings in the *labia*, or lips of the *vulva*. Afterwards, when the *lochia* begin to ceaſe, a ſlightly aſtringent decoction is employed, to aſſiſt the elaſticity of the parts, made of *Provence* roſes, plaintain, wild tanſie; and even, if it be found proper, pomegranate bark.

If the lying-in woman ſeem diſpoſed to be coſtive, there ſhould be given to her, every day, one or two clyſters, with the decoction of the leaves of mugwort, and motherwort, and the flowers of melilot; to which may be added, oil of ſweet almonds, or freſh butter.

In proportion as the *uterus* contracts and diminiſhes, the bandage, which is put round the belly, ſhould alſo be drawn ſtraiter; in order to keep cloſe, in proportion, the teguments of the *abdomen*; and to prevent, or, at leaſt, to diminiſh, the wrinkles, which women who have had children are uſually ſubject to.

Laſtly, after the fortieth or fiftieth day, that is to ſay, when the diſcharge of the *lochia* is entirely over, a purge of moderate ſtrength may be given; and bathing may be afterwards uſed.

III. Above all other things, the principal attention of prudent midwives ſhould be, to obſerve the *milk fever*. They are often to blame

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in neglecting this important part of their duty; and leaving to the care of ſimple nurſes, what frequently demands all the ſkill of an able phyſician. To ſettle the conduct, which ought to be purſued in this point, it is neceſſary to enter into a large detail of particulars; and to have recourſe to the conſideration of very remote things.

1ſt. We have ſeen that, after the labour, the orifices of the lactiferous veſſels emit copiouſly, into the cavity of the *uterus*, the milk they contain; which continues abundant enough, till the end of the ſecond day, or the beginning of the third. But then this milky diſcharge begins to diminiſh in a conſiderable degree: either becauſe the *uterus*, by contracting itſelf, contracts the orifices of the veſſels, which ſupply the milk; or, becauſe theſe orifices contract of themſelves, by their own elaſticity: as has been before remarked.

2dly. It is neceſſary then, that the uterine milk, which has no longer the free vent it had before, regurgitate on the blood, and be at length forced to join the milk of the breaſts, with which it has the greateſt affinity; or, to ſpeak more properly, does not at all differ.

Hence ariſes the cauſe of the milk fever; which comes on in lying-in women, the ſecond or third day after the labour; and of the ſymptoms, which attend this fever. The milk is then wholly and copiouſly carried into the *veſiculæ* of the breaſts; and ſwells them to ſuch a degree, that they compreſs the veins which are near them, and make the blood ſtagnate there. To a combination of theſe two cauſes, muſt be aſcribed the painful tenſion, ſwelling, and heat,

as

as well of the breaſts, where the milk is accumulated, as of the auxiliary glands, into which the milk of the breaſts paſſes; and likewiſe the painful ſtrings, which extend from the breaſts to thoſe glands; and which are formed by the ſwelling of the lymphatic veſſels, deſigned to carry the milk thither. In this ſtate, the outſide of the breaſt is tenſe, and loaded; the reſpiration difficult, and interrupted; a ſenſe of pain felt, even to behind the ſhoulders; and the patients are obliged to hold their arms at a diſtance, to avoid compreſſing the auxiliary glands, which are painful.

3dly. But this is not the whole: the milk, by ſtagnating longer in the blood, grows aceſcent, and thence acquires a tendency to thicken it; which occaſions a ſhivering, or cold fit, more or leſs ſtrong; but almoſt always marked by the concentration of the pulſe, paleneſs of the face and nails, convulſive ſhrivelling of the ſkin, chatterring of the teeth, *&c.* This ſhivering, or cold fit, ſometimes laſts two hours, with the ſame force; and at others, diſappears almoſt in an inſtant: but it is always followed with a feveriſh paroxyſm, or hot fit, greater or leſs, in proportion to the cold fit which has preceded; in the ſame manner as in intermitting fevers. This paroxyſm, or hot fit, after having continued fifteen or twenty hours, and ſometimes even a day, or a day and an half, terminates, at laſt, in the ſame way, as the hot fit of an intermittent fever, by copious ſweats: at leaſt unleſs the interference of ſome particular cauſes, convert this ſlight fever and *ephemeron* into a continued fever.

4thly.

4thly. Theſe accidents, and the fever which attends them, vary, from ſeveral reaſons.

Accordingly as the food, which has been allowed the lying-in woman, is more or leſs ſtrong; and ſupplies more or leſs chyle, or ſuch as is more or leſs thick.

Accordingly as the *veſiculæ* of the breaſts are narrower, as in the firſt or ſecond child-bed; or more dilated, as in the future ones.

Accordingly as the *uterus* contracts itſelf more or leſs quickly; and the lactiferous veſſels are cloſed more or leſs entirely.

Laſtly, accordingly as the milk eſcapes, more or leſs abundantly, through the extremities of the breaſts.

5thly. This laſt reflection, which is confirmed every day by experiment, makes it eaſily to be comprehended, that the milk fever, and the conſequences which it brings on, were formerly much leſs bad: when it was the cuſtom, as ſoon as the milk began to aſcend, to draw the breaſts of the lying-in woman, by the aſſiſtance of perſons accuſtomed to this office. This furniſhed an eaſy vent to the milk; diminiſhed the painful ſwelling of the breaſt, axiliary glands, and ſtrings which paſs from the breaſts to thoſe glands; took away the milk that ſtagnated in the blood; diminiſhed the cauſe of fever, and the fever itſelf; and, in ſhort, prevented thoſe collections of milk, which are at preſent ſo frequent and dangerous.

7thly. Unfortunately, this cuſtom is diſcarded now: becauſe it was believed to be prejudicial to the preſervation of the beauty and hardneſs of the breaſts. This reaſon, which is not, perhaps, at the bottom, ſo true as it is thought, has pre-

prevailed to ſuch a degree, that, at this time, no women follow the ancient practice. They will all have their milk driven away; that is to ſay, oblige all that, which does not eſcape through their paps, to paſs from their breaſts to the glands of the groin.

In order to this, the next day after the labour, the boſom of the lying-in woman is covered with cotton lint, up to the level of the breaſts; and compreſſes are applied above it; which are kept in their place, and faſtened by a towel put round the breaſt; which treatment is continued, till the milk fever be over.

Under theſe circumſtances, only a little of the milk, which is in the blood, can paſs into the breaſts; becauſe they are compreſſed: and the little which does paſs there, ſo far from being evacuated by ſuction, cannot even run out by the paps, that are themſelves in a ſtate of compreſſion. It is neceſſary, therefore, that it muſt paſs from the *veſiculæ* of the breaſts, into the axilliary glands; and from thence, into the left ſubclavian; where it re-mixes with the blood. All the milk, conſequently, of the lying-in woman, remains in the blood: either becauſe it is retained there; or, becauſe it is re-mixed with it: and it is with great difficulty evacuated, by ſweat, urine, or ſtool: which always gives reaſon to fear, that this practice ſhould end in ſome collection; which is only too common.

IV. However blameable, therefore, may be this new practice; yet, as every body is forced to give into it, there ariſes a neceſſity of being informed of the means, which ſhould be employed to prevent, as much as poſſible, the bad conſequences of it.

1ſt. As

1ſt. As long as the cold fit laſts, the patient ſhould be covered, and warmed with towels; avoiding to give her any thing to drink, however thirſty ſhe may feel herſelf: becauſe, experience has taught, that this indulgence ſerves only to render the fit ſtronger, and more laſting.

2dly. When the hot fit begins to ſhow itſelf, the breaſt, and the armpits, ſhould be embrocated with freſh oil of roſes, or of ſweet almonds; in order to relax the parts, and render them capable of ſwelling with leſs pain.

3dly. The breaſt, and the armpits, muſt be covered with cotton lint: which muſt be kept in its place, by ſimple compreſſes of half-worn linen; in order to keep up, in the milk, a conſtant and equal heat; which hinders it from coagulating.

4thly. This dreſſing muſt be ſecured by a handkerchief, or ſoft towel; which muſt be a little ſtrait, to check the two great ſwelling of thoſe parts: care being taken, nevertheleſs, not to compreſs the breaſts too much.

5thly. In this ſtate, the uſe of clyſters cannot be too often repeated; and they may be, of the decoction of mugwort, motherwort, and melilot: to which may be added, if liked, oil of ſweet almonds, or of olives: in this manner, a part of the milk, with which the blood is ſurcharged, may be carried off by ſtools.

The patient ſhould, alſo, be made to drink plentifully of ptiſan, warm, or, at leaſt, with the cold taken off, made with an infuſion of capillair; or a decoction of the roots of *calamus aromaticus*; in order to provoke ſweats, and urine; and to evacuate, by one or other of theſe ways, a part of the milk.

7thly.

7thly. It would be an advantage, if lying-in women could be brought to take broth only as their food, till the milk fever be over; in order to diminiſh the quantity of milk, which they muſt have. But, at leaſt, they ſhould obſerve a ſevere regimen; and only have ſmall broths, ſo long as the fever continues. They may, when it is gone off, have ſtronger broths; and even ſome pottage: but they muſt not be permitted to eat fleſh, before the ninth or tenth day.

8thly. Laſtly, if the milk fever continue more than thirty or forty hours; or be accompanied with any bad ſymptom, as *delirium*, vomiting and purging, convulſions, inflammation of the breaſt, *&c.* it is proper to adviſe the calling in a phyſician; and to reſign the care of the patient into his hands.

CHAP. V.

The conduct, which muſt be obſerved, with regard to new-born children.

THE care, which muſt be taken of the child, when firſt born; and, which then enters into a kind of life entirely new to it; comprehends a conſiderable detail of particulars.

I. The ombilical cord muſt be tied. In order to that, take a hempen thread *(or packthread)*, doubled five or ſix times, of the length of a quarter of an ell, and tied at the two ends, to keep the threads united.

With this tie the cord, at the diſtance of an inch, or two fingers breadth, from the navel; paſſing the cord once round, and ſecuring it by a double knot: then bring the thread round

again; and make, at the back, another double knot: and, afterwards, cut off the reſt of the cord, at the diſtance of a full inch, or inch and an half, from the ligature. This may be done without fear; for the child feels nothing of it. Take care, however, to draw the ligature moderately cloſe, to ſtop the blood: but not too ſtrongly, for fear of cutting the cord.

Cover the cord with a bandage, of ſoft and ſupple linen; extend it above on the belly: then lay a little compreſs under, and another above; fixing the whole, by a little bandage put round the belly.

Examine, the following days, the ſtate of the cord. There are ſome children, in whom it is ſo large and ſwoln, that the ligature is ſubject to be relaxed, as the cord dries: and, in this caſe, the ligature muſt be drawn ſtraiter, or a new one made.

The dry cord falls off of itſelf, the ſixth or ſeventh day; or, at the leaſt, the ninth or tenth. It is proper to let it fall, without ſhaking, or drawing it; in order that the navel may be well cloſed. In whatever place the ligature may be made, the cord falls off near the navel: becauſe the cord is not a natural part of the child, but has been ſoldered to the navel; and ſeparates itſelf again, at the place of ſoldering.

The blood, which is in the veſſels of the cord, ſhould never be ſqueezed back, into the body of the child: for that can only do injury to it; eſpecially with regard to the blood of the ombilical arteries. But it is proper to make the ligature, without preſſing the cord.

It is an uſeleſs precaution, to leave the cord longer in boys than in girls: and the reaſons which

which they alledge, to authoriſe this practice, are ſo abſurd, that they do not merit to be refuted.

II. The child muſt be waſhed, while held in its ſwaddling cloths, near the fire.

The white froth, and blood, with which it is generally covered, is taken off with red wine and water, warmed, and mixed together; in which little pieces of linen are to be dipped. If the filth adhere too much, a little oil of ſweet almonds ſhould be applied to get it off; or a little freſh butter, melted in warm red wine: but, it is not proper to ſtrive, to ſeparate it too much at firſt; for afterwards it will come off itſelf.

III. It is proper to examine, 1ſt, the ſtate of the bones of the head, its *ſutures*, and *fonticulus*; and to rectify them gently, if there be occaſion.

2dly. The ſtate of the bones of the noſe, and to raiſe them, if they be flattened.

3dly. The ſtate of the articulations; in order to render them free, and ſupple.

4thly. The ſtate of the *penis*, in boys, and *vulva*, in girls; and of the *anus*, in both ſexes; to be certain, that the parts are open.

5thly. Laſtly, the ſtate of the limbs; to ſee if there be any contuſion. In which caſe, they ſhould be rubbed with oil of ſweet almonds, in which a little vulnarary water is put.

IV. It is requiſite, to procure the evacuation of the urine, and *meconium*, or firſt ſtool.

The child generally makes water while lying, near the fire. It begins, alſo, to void the *meconium* there; but imperfectly enough. To render this evacuation complete, an ounce of oil of

ſweet almonds, with an ounce of ſyrup of pale roſes, ſhould be given it.

V. The child muſt be afterwards ſwaddled: in doing which, regard muſt be had,

1ſt. To put a compreſs upon the *fonticulus*: which ſhould be faſtened to the cap.

2dly. To put little pieces of linen behind the ears, in the arm-pits, and to the groins.

3dly. To put a compreſs on the breaſt; and cloth betwixt the thighs.

4thly. To ſwaddle it, in a manner firm enough, to ſupport, and form the body; but not ſtrait enough, to render it uneaſy.

VI. The mother's breaſt ſhould not be given to it, for fifteen, twenty, or twenty-four hours: but, in the mean time, it is proper to make it ſuck a little wine, ſweetened with ſugar, to cut the phlegm that is in the ſtomach.

VII. If the child be born very weak, in conſequence of the hardneſs of the labour, it ſhould be endeavoured to divert, and give it ſpirits;

By rubbing it with warm cloths—applying on its ſtomach and breaſt, compreſſes dipped in hot red wine—blowing wine into its face and mouth—tickling the ſoles of the feet with a little bruſh—making it ſmell at a peeled onion:—but it is uſeleſs to apply the *p'acenta* on its belly, or to dip the *after-birth* in hot wine: though, after all, theſe practices may be allowed.

BOOK III.

Of deliveries that are not natural.

Under the names of deliveries, that are *not natural*, are comprehended two kinds. In the one, the children, though they preſent themſelves, in a natural ſituation, that is to ſay, by the head, or by the feet, have the body, or the limbs, in poſtures, which cauſe an obſtacle to their paſſing out. Deliveries of this kind, are common enough, in general; but little dangerous; and comprehend only a ſmall number of caſes. In the other, the children, inſtead of preſenting themſelves, in a natural ſituation, that is to ſay, by the head, or feet, preſent themſelves by ſome other part; which renders, in that poſition, the delivery very difficult, and almoſt always impoſſible. The labours of this kind, are dangerous, and furniſh a great number of particular caſes; but, happily, they are very rare.

CHAP. I.

Of the labours, where the children preſent themſelves by the head; but in a poſture which makes an obſtacle to their paſſing out.

IT does not ſuffice, in order to render the delivery natural, that the child preſent itſelf by the head: but is requiſite, at the ſame time, it ſhould preſent itſelf in a proper poſture.

It is neceſſary, therefore, 1ſt, That the head, and the body, be in a right line with the *vagina*, that it may eaſily take the proper direction in coming out. 2dly, That the head preſent itſelf alone, without any other member, that its paſſage may be ſo much the more eaſy. 3dly, and laſtly, That the face be turned downwards, for the reaſons ſeveral times before mentioned. As the want of any ſingle one of theſe circumſtances, is ſufficient, to render the delivery againſt nature, although the child do preſent itſelf by the head; there muſt reſult thence three different caſes, which merit each of them particular conſideration.

CASE I.

When the child preſents the head and body, obliquely to the vagina.

THE obliquity of the head, and body of the child, with relation to the entrance and direction of the *vagina*, makes the child, inſtead of taking a ſtraight or direct line, catch againſt one of the ſides of the orifice of the *uterus*, ſtop there, and preſent to the paſſage, different places of the head, according to the parts of the orifice by which it is ſtopped. Let us ſuppoſe the child to be well turned, and have the face downwards. In this caſe, if the top of the head pitch againſt the fore edge of the orifice, the child will preſent itſelf by the face: if it pitch againſt the back edge, it will preſent itſelf by the back part of the head: and laſtly, it will preſent itſelf by the right or left ſides of the head, accordingly as the head ſtops againſt the right

right or left edge of the orifice. But the child will take poſtures entirely oppoſite, in the ſame caſes, if it be ſuppoſed, that, in preſenting itſelf obliquely to the orifice of the *uterus*, the face be turned upwards, in a contrary poſition to that we have before ſuppoſed.

As it is taken for granted here, that the *uterus* is ſtraight, and placed in a line with the *vagina*, in ſuch manner that its ſituation cannot any way contribute to the obliquity of the child, it can only be attributed to the irregularity of the turning, which has not been great enough, when the head catches at the fore edge of the orifice; has been too great when it catches on the back edge; and has deviated, either to the right, or the left, when it catches on the edges of the orifice, on the right or left ſide. From whatever cauſe, this bad diſpoſition of the head and body of the child, may come, it is apparent that it ſtops the delivery, as long as it continues. Therefore, to hinder the mother and child from being exhauſted by fruitleſs efforts, it is proper to loſe no time in remedying it. But as different caſes, in which this oblique ſituation of the child, with regard to the *vagina*, may happen, we will examine *here* only, ſuch as do happen, when the *uterus* is ſtraight, and placed in a right line with the *vagina*; and which comes conſequently, from the ſtate of the child itſelf. We ſhall, however, ſee afterwards, what is proper to be done when the obliquity of the child proceeds from the obliquity of the *uterus* itſelf.

But in the caſe which is now under our conſideration, in order to rectify the head of the child; and in conſequence of that, the reſt

of its body; the following means muſt be uſed without delay.

1ſt. The woman ſhould be laid on her back, in her labour bed, the head and body being a little lower than the buttocks, with her body a little turned on the ſide, oppoſite to that on which the head of the child has catched. The bed, which we have deſcribed above, is very convenient for placing, in this ſituation, without trouble, the woman who is to be delivered: but the ſame thing may be done in a common bed, by the means of cuſhions.

2dly. The poſition, in which this woman is thus put, makes the *uterus* fall from the baſon into the *abdomen*, where it has more room; and the child falls in the ſame manner, towards the *fundus* of the *uterus*, which prevents the head of the child from being ſo ſtrongly forced againſt the edge of the *uterus*, where it has catched. The hand, well greaſed, may be then introduced between the edge of the orifice, and the head of the child, to rectify it gently; and place it in the proper direction in which it muſt be kept.

3dly. In this ſtate, the return of ſome effort or throw, muſt be waited for, and with the help of the contraction of the *uterus*, the top of the head muſt be placed in the middle of the paſſage, in the ſituation wherein it ought to be, which determines alſo the poſition of the body. When it can be done, care ſhould be taken, to place, before hand, the women, in an horizontal ſituation, in order that the firſt effort may puſh the child more eaſily into the paſſage.

4thly. If

4thly. If play enough cannot be given, by this means, to diſengage the head of the child, and bring it, in a direct poſition, into the paſſage, the hand may be advanced, on that ſide where the entry is moſt free, to the ſhoulders of the children; in order to puſh it more inwards; and to obtain a greater facility in rectifying the head. If any be ſo imprudent as to attempt to thruſt back the child by the head, they run the riſk of driving in the *cranium*.

Theſe means are ſufficient, in general, to rectify the head and body of the child: but if it be found that the obſtacle cannot be overcome, the laſt reſource is to turn the child again; and deliver it by the feet, as we have explained before.

CASE II.

When the child preſents the head, with one or both the hands.

THIS caſe happens when the child, in making the turning, puts upon its head, one or both of its hands, in which circumſtances, they preſent themſelves to the orifice, before the head; or at leaſt, together with it.

If the labour have made ſome progreſs, it may be ſuffered to go on in this ſtate, in women who have had ſeveral children, or who have the orifice of the *uterus* thin, ſoft, and eaſibly dilatable. It is then proper, only to ſtretch out the arms, and place them along the head, in ſuch manner that the elbow may not make any angle.

But

But if there be reaſon to fear, that this poſture may render the labour too difficult, and hard, it may be remedied in this manner:

1ſt. By making the woman lye flat, or with the buttocks higheſt, in order to make it eaſy for the child to be puſhed back:

2dly. By then thruſting back gently the child, towards the *fundus* of the *uterus*, and to that end, putting, if neceſſary, the ends of the fingers againſt one of the ſhoulders:

3dly. By placing the hand and the arm, on the ſide, according as room is gained for it, and holding the head oppoſite to the orifice, till the return of a throw:

4thly. By taking advantage of this effort, to let the head come within the orifice, which wholly cloſes up the entrance to the hand and arm:

Laſtly, If there be any difficulty, in placing the arm; and it be judged, that this poſture may make the labour hard, what remains then to be done, is, to turn the child, and make the delivery by the feet, according to the manner which may be ſeen in *book* III. *chap.* 2. and, alſo, in this *book*, *chap.* 3. *caſe* 1.

CASE III.

When the child preſents itſelf with the face upwards, turned towards the bones of the pubis.

THIS bad poſition of the child, is very rare, in deliveries which are made by the head: but they, nevertheleſs, ſometimes happen.

1ſt. When the child is placed in the *uterus*, in a contrary way to the common, with its back againſt

againſt the belly, or its belly againſt the back of the mother, it ſhould be turned till its face be perceived to be againſt the bones of the *pubis*. But this caſe, ſuppoſing it ever did occur, is very rare.

2dly. When the child turns irregularly, from any accidental caſes that interferes.

3dly. When the child, being of itſelf well placed, is obliged to turn round in a contrary direction, to enter into the *vagina*; which happens to women in whom the orifice of the *uterus* is turned towards the *os ſacrum*. Though this poſition does not much hinder delivery, it is yet bad.

1ſt. Becauſe the face of the child, and particularly the noſe, rub againſt the bones of the *pubis*, which do not give way, as thoſe of the *coccyx*.

2dly. Becauſe the child may be ſuffocated by the ſtream of the *lochia*, which, in being diſcharged, fall on its face; though this happens very ſeldom. In this caſe there is no other way to turn the child again, when the delivery is made by the head, as ſuppoſed in this chapter; becauſe the head does not afford any hold. There is, conſequently, a neceſſity to let the delivery be made in this poſition: in order to which, it is only requiſite,

1ſt. To paſs the head, or, at leaſt, ſome of the fingers, well greaſed, on the ſide of the *coccyx*, in order to thruſt it outwards; and to facilitate, in that manner, the paſſing of the head of the child:

2dly. To take care in doing this, not to raiſe the head of the child, which going againſt the bones

bones of the *pubis*, would augment the rubbing of the face:

3dly. When the ſhoulders of the child have paſſed, and the upper part of the body is in the paſſage, to turn it gently on one of its ſides, in order to cover the face from the ſtream of the *lochia*; which begin to be diſcharged. The means we have here propoſed, are difficult to be practiſed with ſucceſs, when the *uterus* itſelf is oblique: we ſhall therefore ſee below the precautions which that caſe requires.

CHAP. II.

Of the labours, where the child preſents itſelf by the feet; but in poſitions, which render the paſſing out impoſſible, or difficult.

THE delivery by the feet requires two circumſtances, in order to its being natural. 1ſt. That the feet preſent themſelves to the orifice of the *uterus*, in a right line with the *vagina*: 2dly. That they preſent themſelves together. 3dly. That they be placed properly for ſhewing that the child has its face turned downwards: that is to ſay, have the heels higheſt, and the toes loweſt.

The want, therefore, of any of theſe circumſtances, are ſufficient to make a particular caſe: in which the delivery is contrary to nature, and merits conſequently, a ſeparate examination.

CASE

CASE I.

When the child preſents the feet obliquely to the entrance of the orifice of the uterus.

AS the child never preſents itſelf by the feet, but becauſe the turning has been rendered irregular, by the cauſes enumerated above, there is no reaſon to wonder, if it be often found, that the feet do not preſent themſelves in a direct line to the orifice, even in the caſes where the *uterus* is ſtraight; and much leſs, in thoſe where it is oblique. It even ſometimes happens, that the child, in order to kick, diſplaces its feet: and fixes them at laſt, againſt the ſides of the paſſage.

From whatever cauſe this caſe may come, it is neither dangerous nor difficult. As ſoon as the orifice of the *uterus* is open enough to admit of the hands being introduced, and the coats are torn, it is proper to take the feet, one after the other, and bend them gently upon the articulations of the knees; by which means a facility may be procured of bringing them ſtraight into the paſſage.

But if any difficulty be found in bending the knees, the fingers muſt be paſſed along the leg, up under the hams, on each ſide, and then, by puſhing them gently, the thigh may bend upon its articulation with the *os iſchion*; and, by that means, the length of the leg being ſhortened, all the requiſite liberty is procured to diſengage the feet: and to adjuſt them to a proper direction with the entrance of the paſſage. At worſt, it may be practiſed to lower the

the upper part of the body of the woman, in order to make the *uterus* fall into the *abdomen*, and the child into the *fundus* of the *uterus*, which will give all the opportunity that can be deſired, to bend the legs or the thighs, and to diſengage the feet, and bring them properly before the orifice.

When the feet are once thus placed, and a certainty is gained, by the means explained above, *book* II. *chap.* 2. that they belong to the ſame child, they ſhould be kept in their place, till ſuch time as an effort of the mother puſhes them into the paſſage; at which time, as ſoon as hold can be taken of them, it muſt be attempted to advance the labour; becauſe the waters being diſcharged through the orifice of the *uterus*, which the feet do not entirely cloſe up, ſoon leave the child dry in the *uterus*, which increaſes the difficulty of the delivery.

CASE II.

When the child preſents only one foot, or one foot and one knee.

BOTH theſe caſes, which often happen, in this kind of delivery, come from the ſame cauſes as the preceding one. The attention, which is to be obſerved, when they are perceived, ſhould be, not to ſuffer the labour to advance in this ſtate: becauſe, if one of the feet was got too far forwards in the paſſage, there would be great trouble in bending and bringing back the leg that was out of its place; and ſome hazard, moreover, of breaking it in the attempt.

In

In theſe two caſes, 1ſt. It is proper to begin by lowering the upper part of the body of the woman, and raiſing her buttocks in order that there may be a deſcent from the orifice, to the *fundus* of the *uterus*; and the child, ſliding down in conſequence of it, may leave the room that is requiſite, to operate without any danger.

2dly. If one foot preſent itſelf with the knee of the other ſide, nothing is then required, but to advance the fingers, well greaſed, under the ham, of which the foot is ſought; to bend the thighs; and, by ſliding the fingers to the heel, taking hold of it, bring the foot back to the orifice of the *uterus*, and extend it by the ſide of the other.

3dly. But if only one foot preſent, it is proper, firſt to examine whether it be the right or left; in order to judge with preciſion, on which ſide it is proper to ſeek for that which is wanting.

4thly. The reſearch after the foot is never very difficult. Nothing is requiſite but to bend the fingers, when they have been introduced into the *uterus*, and to feel all about the ſide, where the foot ſhould be. In all caſes, if there be occaſion for any thing, all that need be done, is to paſs the hand, well greaſed, along the leg and thigh, which are gained, up to their junction with the body, where it will be found at the ſide of the other thigh, from whence by paſſing downwards, the other leg and foot that are ſought for muſt be met with.

5thly. When the two feet are once obtained, one by the ſide of the other, at the entrance of the orifice, or even in the paſſage, it is proper, before any further proceedings, to be certain, that they belong to the ſame child; and, to em-

ploy

ploy for that purpoſe, the means that have been directed above.

6thly, But if, unfortunately, the child preſent in the paſſage, by one leg only, as far as the upper part of the thigh, it is abſolutely neceſſary to puſh it back into the *uterus*, by lowering the upper part of the body, and raiſing the buttocks of the woman in labour, as we have ſeveral times ſaid before, in order to ſeek and bring back the leg and foot, that are wanting, and to reduce every thing to a ſtate in which the delivery may be performed. I am ſenſible, it is alledged, that there are children who have been born in this poſition. If that be true, it muſt have been where the thigh could bend forwards, till it lay againſt the belly. But beſides, that no dependance can be had on ſuch a degree of flexibility in the thigh of the child, the delivery, even in that caſe, would be very difficult, not to ſay impoſſible; and it is conſequently very imprudent to ſuffer ſuch a labour to advance.

CASE III.

When the child preſents itſelf with the toes turned upwards, which ſhews the face is turned the ſame way.

IT has been ſeen, in the foregoing chapter, that when the child comes with its face turned upwards, in the delivery made by the head, there was a neceſſity to ſuffer it to come forth in that poſture, from the impoſſibility of turning it again. Happily this poſture is very rare, in this kind of labour; and the worſt conſequences that reſult

reſult from it to the child, are, to have its noſe cruſhed, and its face bruiſed.

It is quite otherwiſe in the delivery by the feet. On one hand, it is very common for children to have their face turned upwards: becauſe in this delivery there has been no regular turning: and, on the other hand, this poſture is very bad; becauſe it often reſults from thence, that the chin catches againſt the bones of the *pubis*, which puts a ſtop to the delivery: and has ſometimes, even the conſequence of ſeparating the head of the child from the body. But, happily, it is eaſy in this delivery, to prevent theſe inconveniencies, by turning the child, at the proper time, in the following manner.

It is firſt requiſite, to know early, if the child have really its face turned upwards: and for that purpoſe, it is proper to examine the ſtate of the feet, which are within reach. If the toes be upwards, and the heels downwards, it is a demonſtrative proof, the face is alſo turned upwards; and it is conſequently then right, to go about changing the poſture of the child.

In order to do this, as ſoon as the buttocks have paſſed, the right hand muſt be put flat under the loins: and, in proportion as the child comes out, or is drawn out by the other hand, it muſt be endeavoured to turn it gently. It is eaſy to ſucceed in this, in the caſe of living children, becauſe their bodies are firm: but the matter is more difficult with dead children, whoſe bodies have no elaſticity, particularly as to the head; which, through the ſoftneſs of the neck, does not anſwer to the motion that is attempted to be given to it.

CHAP. III.

Of labours, where the child preſents itſelf by the hands, elbows, or ſhoulders.

THIS makes three different caſes; which, though very much reſembling each other, demand, nevertheleſs, to be treated of as ſeparate articles.

CASE I.

When the child preſents itſelf by the hands.

THIS caſe happens, when the child has turned badly; its head is ſtopt, in the middle of the fall; and the hands, which, being at liberty, are ſtretched out, preſent themſelves to the orifice; or when, after having turned well, it is diſplaced by its own motions, or by ſome contortions of the mother. In ſuch ſtate, the child ſometimes preſents one hand, and ſometimes both. This poſition is eaſily diſtinguiſhed, as ſoon as the coats are torn: and, as it is impoſſible, the child ſhould come out in that poſture, expedition ſhould be uſed, to remedy it.

It was ſometimes attempted, formerly, to reduce this caſe, to a delivery by the head; and ſome ignorant midwives act yet in that manner: but without loſing time in ſuch a trial, which will ſcarcely ever ſucceed, and never well, it is proper to turn the child as ſoon as poſſible, when the waters are diſcharged; and to deliver it by the feet.

To

To this end, it is requiſite, 1ſt, To place the woman in an horizontal ſituation; or, what is even more advantageous, in one that is ſomewhat oblique, where the buttocks are a little raiſed.

2dly. To thruſt back, afterwards, gently the *uterus* from the baſon, into the belly; and the child, at the ſame time, towards the *fundus* of the *uterus*, to give a little more eaſe to it.

3dly. To ſearch for the thighs of the child, by paſſing the fingers ſoftly along its body, and, when they are found, to bend them a little forwards, to ſhorten the length of the body of the child, and to be able to turn it more eaſily.

4thly. To take, afterwards, the two feet, and make uſe of them for rectifying the body of the child, by bringing them back towards the orifice; which makes the head deſcend in proportion, towards the *fundus* of the *uterus*.

5thly. If one leg only be found at firſt, to ſeek for the other, which cannot be far off; to bring them cloſe together; and, by their help, to rectify the child.

6thly. To deliver the child at laſt, by the feet, with the precautions noted above, *book* II. *chap.* 2. and *book* III. *chap.* 2. *caſe* 1.

CASE II.

When the child preſents itſelf by the elbows.

IN this caſe, the child may preſent itſelf in ſeveral manners; by one elbow alone; by both together; or by one elbow and a hand. Theſe different poſtures come from the ſame cauſes, which have been explained in the preceding ar-

ticle; and require the ſame aſſiſtance. It is requiſite, therefore, to place the mother in a proper ſituation, to thruſt back the *uterus* into the belly; and the child into the *fundus* of the *uterus*; to paſs the fingers along the elbow, up to the arm-pit; and, by the help of this fixed point, to thruſt, towards the *fundus* of the *uterus*, the upper part of the body of the child. This will bring back the two feet towards its orifice, and afford means of making a delivery that way, in the manner that has been explained in the chapters we have juſt before quoted; and with the precautions that are there recommended.

CASE III.

When the child preſents itſelf by the ſhoulders.

THIS caſe always happens, either from the child's having turned too much, which occaſions it to go beyond the orifice of the *uterus*, and the ſhoulders to take its place: or from its having turned too little; and thence diſordered and perverted, the due œconomy of the turn.

Sometimes the child preſents only one ſhoulder, and ſometimes both; or, to ſpeak more properly, the ſpace betwixt the ſhoulders; ſometimes alſo, it preſents both the ſhoulder and arm; and ſometimes, the ſhoulder alone. In fact, however, theſe caſes differ but little, and require the ſame aſſiſtance.

It is proper, therefore, in all of them, to turn the child again, and to deliver it by the feet,

feet, according to the method that has already been ſeveral times explained: in order to which the woman muſt be placed in a ſituation where the buttocks are raiſed; the *uterus* muſt be diſengaged from the baſon; and the child from the neck of the *uterus*; the armpits, ſhoulders, and head, muſt be elevated from below, by thruſting them towards the *fundus* of the *uterus*; and when they are in it, the delivery by the feet muſt be proceeded with.

Some authors adviſe to ſeek one foot at firſt, and to bring it to the orifice. They ſay the the other will follow, and that, in proportion as they are brought to the orifice, the head and the ſhoulders will go further off, by reaſcending towards the *fundus* of the *uterus*. But they do not tell, what is, nevertheleſs, very true, that, by this means, they run the riſk of breaking, or diſlocating the legs or thighs of the child.

It is of great conſequence to the remark, 1ſt. That, in theſe three caſes, as well as in all the others, which we ſhall explain below in this book, it is proper to know how to act, quickly, as ſoon as the waters are diſcharged: becauſe the *uterus* has not yet had time to contract itſelf: and becauſe the inſide of the coats are yet moiſt and viſcid, and ſuffer the child to ſlip eaſily over them in being turned.

2dly. That the delivery becomes much more difficult, if they wait before they operate: and that holds good for three contrary reaſons, of which it is eaſy to make the application.

3dly. That it ſometimes happens, by leaving an arm, hand, or ſome other part, to hang out of the *uterus*, the part ſwells in a ſhort

time, which ſometimes cauſes an impoſſibility of reducing it, or, at leaſt, but with great difficulty.

CHAP. IV.

Of the deliveries, where the child preſents itſelf by the knees, or the back.

CASE I.

When the child preſents itſelf by the knees.

THE child may preſent itſelf by the knees in ſeveral manners; which depend nearly on the ſame cauſes, and demand the ſame aſſiſtance.

I. Sometimes the child preſents the two knees to the paſſage; this caſe happens, generally, when the child, inſtead of preſenting the head to the orifice, preſents there the feet, from ſome of the cauſes enumerated above; and the feet reſt on the inſide, at the edge of the orifice, which occaſions, that the knees, being bent, preſent themſelves to the paſſage.

The moſt certain means of remedying this, is to lay the woman on her back, and raiſe her buttocks a little; to diſengage the *uterus* from the baſon, and to thruſt back the child towards the *fundus*, to take hold of the legs one after another, by means of the room thus gained, to thruſt the knees upwards, in order to make the thighs bend; to extend, by the opportunity this motion gives, the legs over againſt the paſ-

ſage,

ſage; and to deliver the child by the feet, with the uſual precautions.

Nevertheleſs, if the knees be come very much forward, the delivery may be ſuffered to be executed in this ſtate, eſpecially in women who have before had children; and in whom the orifice of the *uterus* is eaſily dilatable. It is only required, in ſuch caſe, to endeavour to facilitate the delivery, by dilating the orifice, thruſting back the *coccyx*, and greaſing the paſſage with butter.

II. At other times, when one of the feet of the child is ſtopped too far off, in the *uterus*, and the leg, and conſequently the knee, cannot reach the orifice, it happens that the child preſents only the other knee, and of courſe, only one.

To remedy this, after having placed the woman flat, diſengaged the *uterus* from the baſon, and thruſt back the child towards the top of it; the leg of the knee which preſents itſelf, muſt be ſought for; and, being found, the thigh muſt be bent till ſuch time as the knee paſſes by the orifice; and the foot preſent itſelf there. The leg muſt then be rectified; and will, by that means, be in the paſſage.

The ſame muſt be done, with regard to the other knee, when out of its place; which may be eaſily found. It is to be bent inwards, till the foot be brought to the orifice. The leg muſt be then extended; and the child delivered by the feet.

Nevertheleſs, after bringing back the diſplaced leg, the delivery may be ſuffered to be made, without unbending the knee, which is in the paſſage: ſuppoſing it be got far in it, or that it be already ſwoln. But, unleſs the wo-

man has had ſeveral children, or there be a certainty, that the edges of the *uterus* be ſoft, ſupple, and fit for extenſion, the delivery in this form, is always difficult and hard.

III. Laſtly, the child preſents itſelf ſometimes by one leg, and one knee; in which caſe, one foot comes eaſily into the paſſage; and the other is ſtopped by the edge of the orifice, which bends the leg up to the knee.

In this caſe, as well as in the two preceding, the child may be delivered in that ſtate, when the leg and the knee are come very forwards, or are already ſwoln, eſpecially if the woman in labour have already had two children, or have the edge of the orifice ſupple and ſoft: all that is then required to be done, is, to aid the delivery by dilating the orifice with the fingers, greaſing the paſſage well, and puſhing back the *coccyx*.

But the moſt certain way, is always to replace the parts of the child. For this purpoſe, after having placed the woman flat, diſengaged the the *uterus*, and puſhed back the child into it, far enough to be able to move the knee; bring it forwards at the ſide, till the foot preſent itſelf to the paſſage, where it will be brought, by rectifying the legs; after which, deliver the child by the feet.

In this delivery, as well as in all the others of this kind, attention muſt be paid, as we have already ſaid above (*b*), to the gaining a certainty, that the two feet which are obtained, belong to the ſame child; and to turn the body

(*b*) Book II. chap. 2.

of

of it, ſo as to put the face downwards, in caſe it be not ſo.

CASE II.

When the child preſents itſelf by the back.

THE child may take this ſituation in two caſes; the one when it makes the turn too forcibly, in ſuch manner that the head paſſes beyond the orifice, and the back is placed there. The other, when it does not make any turn, and that, by falling upon its feet, a little diſtance from the orifice, it ſeems to ſit upon the paſſage. This bad poſture may often, alſo be owing to the motions of the child only.

When the breech therefore, preſents itſelf to the orifice, it is difficult to diſtinguiſh it from the head, while the coverings are intire. The difference is, nevertheleſs, perceived, on account of its being ſofter; becauſe the back is parted into two buttocks; and it *crowns* leſs exactly, becauſe it is leſs round.

When there is a certainty, that the breech of the child preſents itſelf, the ſhorteſt, and ſafeſt way, is to tear the coats; ſuffer the waters to be diſcharged; turn the child; and deliver it by the feet.

In order to this, the woman muſt be placed flat, or with her buttocks a little raiſed; the *uterus* diſengaged from the baſon; the child puſhed towards the *fundus* of the *uterus*; the legs ſought for, one after another, and brought to the orifice, by bending the knees; and the trunk and head of the child rectified in ſuch manner, that there may be nothing more required afterwards,

afterwards, than to deliver it by the feet, with the precautions which have been already several times given.

It is pretended, that, if the back of the child be far advanced in the orifice, and the baſon, and the reduction become very difficult, the delivery ſhould be ſuffered to go on; and the child to come forth bent double: which appears, however, to me, a conduct that muſt be always imprudent. If this meaſure be, nevertheleſs, purſued, it is proper to facilitate, as much as poſſible, the coming out of the child, by aſſiſting the dilatation of the orifice; greaſing well the orifice; puſhing the *coccyx* outwards; and paſſing the fingers in the manner of a crotchet, into the groin of the child, to aſſiſt in drawing it out: but taking care, at the ſame time, not to wound the *ſcrotum*, if it ſhould be a boy.

CHAP. V.

Of the deliveries where the child preſents itſelf by the back.

IT ſometimes happens to the child, to get into this bad ſituation, when it has made too great a turn, which carries the head beyond the orifice, and places the back there; when it makes no turn at all, but falls on its back; and, laſtly, when it takes this ſituation, from ſome accidental reaſon, which puts it out of its natural place.

It

It is very important to know this ſituation of the child early, in order to remedy it quickly; and it may be diſtinguiſhed, 1ſt, when nothing but a bag full of water is found at the entrance of the *uterus*, or, as ſometimes happens, the cord is perceived there: 2dly. When, by advancing the finger further, the reſiſtance of the ſpine of the back, or back bone, is felt.

In this ſituation, it often happens, that the umbilical cord eſcapes, and gets out of its orifice, which augments the danger, for reaſons we ſhall ſee below. This coming out of the cord is occaſioned by the poſture of the child; which being fixed croſs-ways in the *uterus*, ſuffers the cord to ſlip out, with the waters, by the ſide of the belly: and to deſcend through the orifice.

This bad ſituation muſt be remedied as ſoon as poſſible; as well, becauſe, otherwiſe, the *uterus* by contracting, would embrace the child ſo cloſely, that it cannot be afterwards turned; as becauſe there is reaſon to fear, that the child may be loſt, in conſequence of the compreſſure, which the head and breaſt muſt undergo in this ſtate. It is proper, therefore, to tear the coats; ſuffer the waters to be diſcharged; turn the child; and make it come forth by the feet.

In order to this, it is requiſite, 1ſt. to introduce the hand, well greaſed, into the *uterus*, after having diſtinguiſhed, as well as is practicable, on which ſide the feet are; on account of making uſe of the hand which anſwers to that ſide.

2dly. By means of the hand which is introduced, to bend gently the thighs and legs, upon the hips and knees, in order to ſhorten the length

length of the body of the child; and to free it from the tranverſe poſition in which it lay.

3dly. After having diſengaged it, to make the lower part of the body approach the orifice of the *uterus*, in order to bring the feet thither.

4thly. At all adventures, to ſtrive to turn the child, in ſuch manner, that the back, which was before loweſt, ſhould then be higheſt, in order to be able to draw the body of the child; and, by ſhortening its length, procure a little more room, to bring the feet to the paſſage, and accompliſh the delivery. With relation to this, too much caution cannot be given, to be attentive to thoſe things, which we have already recommended ſeveral times before.

The firſt is, to be certain before the delivery be precipitated, that the two feet which are gained, belong to the ſame child.

The ſecond, to turn the child with its face downwards, in caſe it may be in any other ſituation.

The laſt, to perform thoſe operations in the middle of the coats, or coverings of the *fœtus*; which coverings, on one hand, ſerve as a lining to defend the *uterus*; and, on the other, facilitate the motion of the child, becauſe they are ſmooth and lubricous.

CHAP.

CHAP VI.

Of the deliveries where the child preſents itſelf by the belly.

THE child takes this ſituation, when the head is ſtopped in the middle of the fall; and the body of it is very long, or the *uterus* very narrow. This is the moſt dangerous of all ſituations. 1ſt. Becauſe the belly is ſtrongly compreſt; and, by its being ſtretched out in the paſſage, there is danger of inflammation, or gangrene, if it remain too long in this ſtate. 2dly. Becauſe the umbilical cord, which hangs in the paſſage, may ſoon ſwell and mortify. 3dly. Becauſe the head and the breaſt are much preſſed: in all which caſes, the child will periſh in a ſhort time.

This poſition may be perceived, even before the waters are diſcharged. 1ſt. Becauſe the *uterus* opens itſelf ſlowly. 2dly. Becauſe the waters which form, are, in proportion, narrow and thin. 3dly. Becauſe there is nothing preſented to the orifice.

But a greater certainty is gained, when the coverings are torn. 1ſt. By the adheſion of the cord, which hangs on the orifice. 2dly. By the ſoftneſs of the belly, when the fingers can be thruſt up far enough to reach it; for the inflexibility of the ſpine does not ſuffer the belly to come cloſe to the orifice; eſpecially at the beginning of the labour.

This poſture renders the delivery abſolutely impoſſible, while it continues; and there is no other way of procuring a change, than by turning

ing the child; bringing the feet to the orifice; making the head riſe towards the *fundus* of the *uterus*; and then, delivering the child by the feet.

To effect this, it is proper to make uſe of the means, which have been propoſed ſeveral times already.

1ſt. To place the woman flat in an horizontal ſituation; or even to manage, ſo that her buttocks may be a little higher than her body.

2dly. By advantage of this ſituation, to diſengage the *uterus* from the baſon; puſh it into the belly, and give a little room to free the child, which is fixed croſs-wiſe.

3dly. To paſs the hand, afterwards, behind one of the thighs; bend that thigh againſt the belly; and thus bring the knee oppoſite to the orifice.

4thly. To do the ſame by the other thigh, and knee; and puſh gently, afterwards, the two knees, beyond the edge of the orifice, till the feet become placed directly over againſt it.

5thly. and Laſtly. To draw the child then by the feet; and to be certain, that, in proportion as they advance in the orifice, the body of the child may rectify itſelf in the *fundus* of the *uterus*; and every thing be properly diſpoſed for delivery: which muſt be performed with the cautions ſo often before recommended.

In concluding the explanations of the deliveries againſt nature, I ought to add two important reflections.

The firſt, that it is the duty of the midwife to know as early as ſhe can, the ſituation and poſture in which the child preſents itſelf. She has no

no means of doing this, but by ſlender preſumptions, till the *uterus* be opened.

She has more certain indications, when the *uterus* is opened, though the coverings be yet intire.

She has poſitive ſigns, when the coverings being torn, ſuffer her to touch the parts. For it is eaſy to diſtinguiſh, the head, feet, hands, elbows, ſhoulders, knees, breech, or the back and belly.

The ſecond, that two different times, or periods, muſt be diſtinguiſhed in every labour; that, which precedes the tearing of the coverings, and the diſcharge of the waters: and that which follows them.

In the firſt, nothing renders haſte neceſſary; and it is proper to wait and be patient; at leaſt if the woman in labour do not ſuffer extremely, or the child undergo much, and incur the danger of its being too much weakened; eſpecially, unleſs ſome part preſent itſelf in the paſſage, which would hinder the delivery, if it was ſuffered to come further.

It is quite otherwiſe in the ſecond. It is then proper to make haſte, as ſoon as the waters are paſſed: becauſe the *uterus*, which then contracts, embraces the child more and more cloſely; becauſe the coverings, which grow dry, render the motion of the child difficult; becauſe the paſſage and *vagina*, which ſwell, detain the child.

We may, without exaggeration, therefore aſſert, that every hour after the paſſing of the waters, the danger increaſes a third; even in the delivery by the head: but, in a greater degree, in that which is made by the feet.

BOOK IV.

Of deliveries, that are hard and difficult.

In the more natural deliveries, with regard to the ſituation of the children, difficulties and obſtacles often preſent themſelves, which render the labours hard, difficult, and dangerous: but theſe difficulties are ſtill more frequent and bad in the labours, where the child preſents itſelf in a ſituation contrary to nature. This claſs of deliveries, that is the hard and difficult, therefore, remain to be explained.

Theſe difficulties or obſtacles, which render the labour hard, may be aſcribed to four principal cauſes: one, reſpecting the mother; one, the child; one the after-birth; and one, any caſual accident. We ſhall, in this book, ſpeak of the hard labours, which come from theſe four principal cauſes, in four chapters; and, in each chapter, we ſhall include the different caſes which may belong to each article.

CHAP. I.

Of the difficult and hard labours, which proceed from the mother.

CASE I.

Of the difficulty which proceeds from the obliquity of the uterus.

IN the deliveries, that have been explained hitherto, it has been always ſuppoſed, that the *uterus* was ſtrait; and, alſo, that its *fundus* and orifice

orifice were in the ſame direction with the *vagina*: it being certainly the moſt natural ſituation of the *uterus*; and the moſt advantageous for the coming out of the child; becauſe then it preſents itſelf in a ſtraight direction, with the way it is to paſs.

But this poſition is very rare; and the *uterus* is found very often oblique, with regard to the *vagina*. Sometimes it is thrown backwards, to the loins; and then the orifice is turned towards the bones of the *pubis*. Sometimes it is thrown forwards; and then the orifice is turned towards the curvitude of the *os ſacrum*. Sometimes, laſtly, it is thrown on the right ſide, or on the left; and, then, the orifice is turned towards the bones of the *ilium*, on the right ſide, or the left.

Though all theſe poſitions are poſſible, it is, however, certain, the *uterus* inclines more commonly backwards or forwards, than towards the ſides: either becauſe of the round ligaments, which bind the ſides to the right and left; or, becauſe that towards the neck it is a little flattiſh backwards and forwards; which will ſcarcely ſuffer it to be moved, but in thoſe directions.

The oblique poſition of the *uterus*, on what ſide ſoever it be turned, takes off from the facility of the delivery: becauſe the child, inſtead of having room, to come directly into the *vagina*, is ſtopped in the paſſage by the edge of the orifice, againſt which it ſtrikes; which renders ineffectual all its own efforts, as well as thoſe of the mother. But of theſe different poſitions, the worſt is that where the *uterus* is thrown forwards; and where its orifice bears on the *os ſacrum*; in the concavity of which the head is

faſtened; and whence it is difficult to draw it out.

I ſhall not repeat here what has been ſaid above, on the cauſes of the obliquity of the *uterus* (*a*); nor yet the ſigns which ſerve to diſtinguiſh it; or towards which way it inclines; as they are enumerated in *book* I. *chap.* 5. but I ſhall content myſelf with obſerving, in a few words, that the *uterus*, when it is oblique, is very high; and that there is a difficulty in reaching it; becauſe the point of the neck of the *uterus* does not come down into the *vagina*, as when the *uterus* is ſtraight: and that only one part of the neck of the *uterus* can be then touched; which may be, however, the fore part, hind part, or one of the ſides; according to the kind of the obliquity.

I. In all theſe caſes, the *uterus* muſt be rectified; and brought back, as far as poſſible, to a ſtraight poſition: and, for that end, it is requiſite,

1ſt. To make the woman lie down, with her face upwards; and her buttocks higher than the trunk of the body: in order, the more eaſily, to be able to puſh the *uterus* out of the baſon; which is to be done, by introducing the hand, well greaſed, into the *vagina*, to thruſt it gently upwards.

2dly. When, by this means, a little room is procured, to guide the orifice directly towards the *vagina* with the ſame hand.

3dly. To aſſiſt, alſo, with the other hand, in compreſſing ſoftly, from without, the *abdomen*, to adjuſt the *uterus*.

4thly. To wait till the head of the child be within the paſſage; or, at leaſt, till it preſent it-

(*a*) *Liv.* II. *chap.* II.

ſelf

ſelf there; after which, the delivery may be performed in the common manner.

II. But, if the delivery cannot be effected in this way; and the *uterus* revert always to the ſame obliquity, ſo as to render the delivery very difficult; it is proper then, without delay, to determine to turn the child, as has been frequently ſaid; and to deliver it by the feet, which remedies the whole. Becauſe, that as ſoon as the feet are gained, there is a certainty of rectifying the body of the child; adjuſting the *uterus* itſelf; and, conſequently, its obliquity, which makes againſt the delivery by the head; but ſcarcely does any harm to that by the feet.

It muſt be obſerved, that the obliquity of the child in the *uterus*, of which we have ſpoken, may meet, at the ſame time, with the obliquity of the *uterus* itſelf; which may be in two oppoſite manners. In the one, the obliquity of the child in the *uterus* may be in a contrary direction to the obliquity of the *uterus* itſelf; and then the obliquity of the child, will correct that of the *uterus*. But this caſe is rare; ſuppoſing it even to be poſſible. In the other, the obliquity of the child is in the ſame direction, as the obliquity of the *uterus*; and then the coming out of the child is, thence, ſo much more difficult: and the neceſſity of turning, and delivering it by the feet, ſo much more urgent.

CASE II.

Of the difficulty, which comes from the weakneſs, or paſſiveneſs of the uterus.

THE muſcular contraction of the *uterus*, is the principal cauſe of the force which puſhes forwards the child, and procures delivery. If this contraction be weakly made, a long and difficult labour muſt, therefore, be expected from it: and this happens in two caſes.

1ſt. When the *uterus* is provided with very few muſcular fibres; and ſuch as are thin, weak, ſmall, and incapable of exerting a ſtrong contraction. This a fault of conformation.

2dly. When theſe fibres, although naturally numerous, and firm enough, are relaxed by the *ſerum*, which has ſtagnated, during the pregnancy, between the *chorion* and the *uterus*. Theſe waters are diſcharged, in the beginning of the labour, as ſoon as the *uterus* begins to open: but it remains in a ſtate of ſoftneſs and paſſiveneſs, which greatly weakens the contraction.

Happily, in both caſes, the orifice of the *uterus* participates of the ſame faults of conformation, as the *uterus* itſelf: whence it is much more ſoft, and ſupple; and yields more eaſily to the coming out of the child: which compenſates, in ſome manner, for the relaxation of the *uterus*.

The midwife may eaſily know this ſtate of the *uterus*, by the ſlowneſs, or weakneſs, of the efforts; and to remedy it, ſhe muſt encourage the woman in labour, by promiſing her a quick and eaſy delivery; and making her take a little orange

orange flower water; or, generous wine; or, a little toaſt dipped in the wine; by giving her ſnuff, to make her ſneeze; or, by adminiſtring an irritating clyſter; or, if it be neceſſary, a doſe of *tartar emetic*.

As to the practice in the delivery, where the child preſents itſelf by the head, the delivery muſt be made in that way: and the coming out of the child muſt be facilitated, by diſtending gradually the orifice, which does not much reſiſt opening. If the child do not preſent itſelf at all, for want of being protruded by the *uterus*; or, if it preſent itſelf in any of the other ſituations; care muſt be taken to make the delivery by the feet, with all the precautions, that have been ſo many times already recommended. Such a paſſiveneſs of the *uterus*, as it goes on continually augmenting, renders the labour more difficult every moment, when any delay is made in purſuing this method.

CASE III.

Of the difficulty, which proceeds from the orifice of the uterus.

THE orifice of the *uterus* is a very narrow paſſage, through which the child muſt come forth: and it is, alſo, the place of the greateſt pain to the woman in labour. As the delivery is eaſy, when this orifice is open, or eaſy to be opened; ſo, on the contrary, it is difficult and hard, in the three following caſes.

1ſt. When the circumference is hard, compact, and denſe, in a degree that does not exceed the limits of nature. Such the ſtate of this

orifice commonly is, in virgins, who marry late in life; with whom the labours are always long, and more difficult, than in young women.

2dly. When there is, in any part of the circumference, any ſtricture or *cicatrix*, which has ſucceeded to a crack, ſlit, or excoriation, which comes from any preceding labour, that hinders the uniform diſtenſibility of the orifice.

When there is, in the circumference, any part that is callous, or ſchirrous; which is the conſequence of a preceding hard labour, or the effect of a venereal taint: in which caſe, the orifice is not more eaſy to be diſtended, than in the former one.

An experienced midwife muſt have perceived theſe defects, on touching the woman before the labour; and, conſequently, muſt have endeavoured to remedy them, or at leaſt palliatively, by the uſe of emollient fomentations of the *abdomen*; of injections of the ſame kind, after having placed the pregnant woman in a poſture, proper to retain them in the *vagina* for ſome time; of peſſaries, made of the pulp of emollient plants; of the vapour of a warm decoction of ſuch plants; or of unctions, made with freſh butter, and often repeated. Theſe ſhould be employed ſeveral times before the labour.

When the woman is actually in labour, the midwife ſhould try to know, as ſoon as ſhe can, the ſituation in which the child preſents itſelf. If it be by the head, ſhe ſhould ſuffer it to come out in that manner: care being taken to aſſiſt, by dilating the orifice as much as poſſible; and anointing it with freſh butter.

If, on the contrary, the child preſent itſelf by the feet, ſhe ſhould take advantage of this ſituation,

ation to make the delivery; and ſhe ſhould, indeed, bring the child to this ſtate, in whatever other ſituation it may preſent itſelf, by taking all the precaution before adviſed; either in turning the child again, or in pulling it gently, and gradually.

The ſame means muſt be employed, and the ſame attention given, when a woman is to be delivered, who has a ſtone in the bladder; or the hœmorrhoids ſwelled; or any tumor in the *rectum:* which require that care ſhould be taken to relax the *vagina* well; and not to haſten too much the coming out of the child.

CASE IV.

Of the faults, which proceed from the vagina.

THE faults of the *vagina* do harm to the delivery, in two caſes; but they are both rare.

The *firſt*, if the membrane, known by the name of *hymen*, which cloſes, croſs-wiſe, the orifice of the *vagina*, leaving a hole in the middle for the paſſage of the *menſes*, be ſo denſe, and remains ſo entire in any women, as to make an obſtacle there to the paſſing out of the child. This caſe is rare; but there is one more ſo: which is, that, notwithſtanding the entireneſs of the *hymen*, conception may take place, by means of the opening in its middle only. Nevertheleſs, both theſe caſes have really been; and obſervations recorded, furniſh examples of them.

This inconvenience is eaſily known; and, when it is known, it is eaſily remedied. A longitudinal inciſion, from above to below, muſt be made in this membrane; or, for greater ſafety, two inciſions, in form of a croſs; and a peſ-

ſary of linen, rolled together, muſt be put into the newly made opening, covered with ſome proper unguent; to hinder the divided parts from re-uniting, and to make them double back on the edges, where they form the *caruncul æ myrtiformes*.

The *ſecond* which is much worſe, is, when in the length of the *vagina*, the oppoſite ſurfaces are ſo ſtraitly connected together, as not to leave any ground for hopes of ſeparating them; in conſequence of there being only a ſmall paſſage through which the *menſes* flow, and conception has been made; but through which it is impoſſible the child ſhould come forth. This accident is always the reſult of a faulty conformation; or of ſome wound, or exulceration of this part, which may have been healed negligently.

An example of this is to be ſeen, in the *Hiſtory of the academy of ſciences*, in the year 1712, *pages* 37 and 38; which, at the ſame time, diſplays the aid of nature, as being the only relief. "A woman, who was married at the "age of ſixteen, had the *vagina* ſo ſtrait, that "a gooſe-quill could ſcarcely enter it: and yet "it was not cloſed by any extraordinary mem-"brane, as ſometimes happens. . . . Moreover, "ſhe was importuned continually, by a young "and vigorous huſband, who was always hoping, "and trying, though in vain, to force a paſ-"ſage. She was, on her part, very deſirous to "find a remedy for her condition; but none "was to be had. . . . At laſt, at the end of "eleven years, ſhe became pregnant; without, "nevertheleſs, having been penetrated further "than the firſt day. The ſurgeon, *de Mery ſur "Seine*, to whom we owe this obſervation,

"was

" was very much convinced ſhe could never be " delivered. However, about the fifth month, " the *vagina* began to dilate itſelf; and conti- " nued doing ſo always afterwards, in ſuch " manner, that it acquired, at length, the na- " tural and common magnitude; and the woman " was very favourably delivered. The ſurgeon, " believed, with great reaſon, *adds the ſecretary* " *of the academy*, that, in proportion as the *ute-* " *rus* extended itſelf, by the enlargement of the " *fœtus*, the *vagina*, which is a continuation of " it, extended itſelf alſo: and that the ſame " cauſe, which is a greater afflux of blood to the " parts, produced, at the ſame time, both the " effects."

There is found, in the hiſtory of the ſame academy, for the year 1748, another obſervation ſimilar to this, " of a woman of *Breſt*, who had " had the *vagina* ſo narrow, that ſhe could " ſcarcely admit there a gooſe-quill; and who, " nevertheleſs, became pregnant, and was hap- " pily delivered, after three hours labour, of a " ſtrong and ſtout boy." A like obſervation is found in Riolan, *Anthropographia*, *liber* II. *cap.* 35. And other examples, of the ſame kind, are not rare in authors.

CASE V.

Of the difficulty, which proceeds from the baſon.

THE *oſſa innominata*, and the *os ſacrum*, form, by their union, a cavity, known by the name of the baſon: which has been deſcribed in the *firſt book*, *chapter* I. In this cavity, the *uterus* is contained in women, who are not pregnant: but, in

in pregnancy, the body of the *uterus* rises above it; and, after the third or fourth month, only the neck and the orifice remain in it. Through this orifice, the child must pass in the delivery: which gives a weighty reason, for examining the state of it with much attention; and for understanding well the difficult places, which there are in the passage.

Anatomy shews us two such difficult places: the *one*, at the beginning of the bason, betwixt the upper part of the *os sacrum*, which projects inwards; and the bones of the *pubis*: and it may be called the *upper* contraction, or strait. The *other*, at the lower part of the bason, betwixt the *coccyx*, the point of the *os sacrum*, and the tuberosities of the bones of the *ischium*; which ought to be called the *lower* contraction, or strait. In the natural state, these contractions in the form of the bason, though real, are not any obstacle to the passage of the child: but they are found to be so, in the two following cases.

The *first* is, when the bones of the bason, being of a good conformation, but too small, do not leave a sufficiently wide passage betwixt them.

The *other* is, when the bones, being of a bad conformation, although otherwise large enough, straiten, irregularly, the passage which is left betwixt them.

The *first* case is very rare, even in very young and little women: and it is more rare still, that it occasions any considerable difficulty in delivery; when the child, and particularly its head, have only the common and natural size. In all these cases, the conduct should be the same, as in that where the passage of the bones, having the usual mag-

magnitude, the child has too large a head: of which we ſhall ſhall ſpeak in the following *chapter, caſe* I.

The *ſecond* caſe demands a more particular explanation, according as the faulty conformation of the bones of the baſon renders either of the ſtraits narrower.

The upper ſtrait is narrow, contrary to nature, by the faulty conformation of the bones, when the upper convexity of the *os ſacrum* projects too much into the baſon; and, at the ſame time, the bones of the *pubis*, inſtead of projecting outwards as they naturally do, are flat, or even convex inwards. In this caſe, the paſſage, which remains between the *os ſacrum* and the bones of the *pubis*, is ſo narrow, that the child has great difficulty to paſs; and ſometimes no poſſibility of paſſing at all.

II. The contraction of the lower ſtrait happens in like circumſtances, when the point of the *os ſacrum* is too long, and too much bent inwards; the *coccyx* is too large and ſtiff; and the tuberoſities of the bones of the *iſchium*, are too long, large, and crooked; which make the paſſage betwixt theſe ſeveral bones, too narrow. Theſe faults of conformation in the bones of the baſon, are the conſequences of rickety diſeaſes, that the women have had in their infancy: and they are only found in women, who are ill made, lame, crooked, narrow haunched, or ſtrait backed, and ought not to marry, if they act rationally; but who have, nevertheleſs, more eagerneſs to marry, and become mothers, than thoſe who are the beſt formed for it.

In the narrow ſtate of the upper ſtrait, it would be well, that it were known before hand,

by

by touching the pregnant woman, as has been mentioned in the firſt *book*, *chapter* 1. But, at leaſt, it ſhould be diſtinguiſhed at the beginning of the labour, in order to be able to form a certain judgment on the nature of the parts, and on the danger of the delivery, and juſtify, beforehand, by prognoſtication, the bad ſucceſs which there is reaſon to fear: and more particularly, in order to diſcover, if the paſſage be large enough to admit of an attempt to delivery; or, if it be abſolutely impoſſible the child can paſs through it: in which laſt caſe there remains no reſource, but the Cæſarean operation, as we ſhall ſee below, *book* V. *chap.* 6.

It is not only requiſite in this unhappy caſe, that there ſhould be room enough for the child to paſs: but it is neceſſary, alſo, that the child ſhould preſent itſelf, directly by the head; for no aſſiſtance can be given to it. It demands, moreover, much dexterity to purſue the proper meaſures in this delivery: for before the head be in the orifice, it is proper to turn on one ſide, the face, that preſents itſelf downwards: which facilitates its paſſing; becauſe the head is ſmaller from one ear to another, than from the back of it to the noſe. For the ſame reaſon, as ſoon as the head has paſſed, it is proper to place the ſhoulders flat, in order to accommodate them to the paſſage. But if the head and ſhoulders locked in the ſtrait, cannot come forwards, it is right to have recourſe to the crooked *forceps* of *Mr. Levret*, which has ſometimes ſucceeded in this caſe; and, if this expedient fail, to take the deplorable method of diſmembring the child, in order to extract it by pieces. I know that this pro-

propoſition alone, will determine the midwives not to take upon them ſuch a delivery.

The ſtop of the child at the lower ſtrait, is leſs bad in its conſequences. To ſucceed in that caſe, it is requiſite to puſh the *coccyx* outwards, to greaſe well the paſſage; to ſeparate with dexterity, that which obſtructs the child; to endeavour to paſs a finger, greaſed, under its arm-pit, in order to uſe it as a crotchet; to make the woman cough, ſneeze, or vomit; and, if theſe expedients be ineffectual, to employ the crooked *forceps* of *Mr. Levret*, which may, in this caſe, be uſed more commodiouſly, and ſucceſsfully, than in the preceding.

It muſt not be omitted to mention, that there are, in theſe deliveries, two favourable circumſtances, but both very uncertain, and often very inſufficient. The one, that the bones of the *pubis*, and even thoſe of the *ilium*, ſeparate: which renders the paſſage of the baſon a little larger. But this only happens in young perſons, in whom the articulations of the bones are ſtill lax, and the cartilages ſoft; and not then always. The other, that the head of the child, which is the largeſt part of it, and conſequently has the moſt difficulty to paſs, elongates and adapts itſelf to the form of the paſſage. As the *ſutures* of the *cranium*, are membranous in children, the bones of the head flexible, and the articulations lax, the efforts of the child make the head receive the form which agrees with the figure of the paſſage. If it be round, but narrow, the head lengthens itſelf, and becomes round: if it be narrow, and flat, the head lengthens and flattens itſelf.

As in this caſe, it is neceſſary, in order that the head of the child may model itſelf, agree-

ably

ably to the opening of the paſſage, that it ſhould be forcibly puſhed into it; which can only be, when the child preſents itſelf by the head, and can ſtretch itſelf by the hold of its feet; it is evident, that no hopes of ſucceſs can be entertained, when the delivery is not made by the head. But if, unluckily, the child preſent itſelf by the feet, it is almoſt certain, that it can never come forth, except by leaving the head in the paſſage.

If there be ſufficient good fortuue to extract the child alive in theſe deliveries, the firſt care ſhould always be to baptize it. It would have been well, indeed, to have baptized it before by injection; if the thing had been practicable. After this, the head muſt be gently rectified, as it will be out of form; and if there be any hurts on the body, they ſhould be rubbed with oil of ſweet almonds, beaten up with a little red wine warmed.

CASE VI.

Of the difficulty which proceeds from the coccyx, *in particular.*

THE *coccyx*, which, as has been deſcribed, *book* I. *chap.* 1. terminates the point of the *os ſacrum*, to which it is affixed, bends back naturally towards the fundament, and contracts the circumference of the opening of the baſon, without doing harm to the delivery, in its ordinary ſtate; either becauſe it is not long enough, to diminiſh the circumference of the baſon; or becauſe it is flexible, and yields eaſily to the force of the child; which in coming forth, puſhes it outwards. But, as we have ſaid above, it makes

a more

a more conſiderable obſtacle, in *two caſes*. The *firſt*, when it is longer than common; that is to ſay, compoſed of five ſucceſſive bones, inſtead of four; which happens in certain ſubjects. The other, when it is hard and inflexible; which happens in older women, by the induration of the cartilages, that unite with the bones of the *coccyx*, and of the ligament that covers them.

When the midwife has diſcovered this obſtacle, which it is very eaſy to diſtinguiſh, ſhe ſhould puſh the *coccyx* outwards, by introducing one of her fingers into the fundament, and enlarging the paſſage. Sometimes, as the bones of the *coccyx* are not flexible, ſome of them are diſplaced; or, to ſpeak more properly, diſlocated: but the miſchief is not great. After delivery, they may be eaſily put in their place, or reduced; and this momentary diſorder has no conſequences.

CHAP. II.

Of hard and difficult labours, which proceed from the child.

THE child may, itſelf, do harm, in the paſſage out, and render the delivery difficult; and, indeed, it actually does ſo in the following caſes.

CASE

CASE I.

Of the difficulty which comes from the child's head being too big.

CHILDREN are not, all of them, of the ſame ſize; and it is evident, that the delivery of thoſe that are bigger, is always more difficult, than of thoſe which are leſs. But the difference in the ſize of children, with relation to the reſt of the body, is never very conſiderable, nor augments much the difficulty of the delivery. The caſe in queſtion, regards, therefore, only the head and ſhoulders; which are the parts of the body of the child that have the greateſt volume, and are ſometimes extraordinarily large; and, in that caſe, render delivery very laborious. This extraordinary ſize of the head and ſhoulders of children, may be ſometimes a fault of conformation, but moſt generally, it is a conſequence of the reſemblance of children to their fathers, which have in the ſame manner, a large head and ſhoulders.

Every thing well conſidered, this caſe is, in fact, the ſame, as that, when the opening of the baſon is too ſmall, of which we have ſpoken in the laſt chapter, *Caſe the fifth.* For as it is requiſite to the coming forth of the child, that there ſhould be a certain proportion between its head, which is to come out, and the paſſage, the difficulty becomes the ſame, whether the opening of the baſon be too little, the head and ſhoulders of the child being only of the common ſize; or the head and ſhoulders too big, the opening of the baſon being as large as it ought to be.

I. It

I. It reſults from thence, that when the child is too big, it is advantageous on two accounts, that it preſent itſelf by the head, rather than by the feet, in the ſame manner, as in the caſe where the opening of the baſon is too narrow. The *firſt*, that, in the delivery by the head, the greateſt part of the waters remain in the coverings, which hinders the child from becoming dry, and being too cloſely embraced by the *uterus*: whereas, in the delivery by the feet, theſe two inconveniencies happen, from a total diſcharge of the waters. The *ſecond*, that, in the delivery which is made by the head, the child ſtretching itſelf by the feet, and being protruded by the contraction of the *uterus*, acts ſtrongly againſt the orifice, to open itſelf a way there, by dilating it; or at leaſt, to model its head by elongating it; in which it often ſucceeds: whereas theſe two ſuccours fail, in the delivery by the feet; as has been already remarked in the preceding chapter.

If the child, therefore, preſent itſelf by the head, with the face turned downwards, as is common in this ſituation, the midwife ſhould begin by exhorting the woman in labour, to take courage, and be patient, aſſuring her of good ſucceſs.

She muſt aſſiſt, nevertheleſs, by dilating the orifice of the *uterus* gently; by often anointing it with freſh butter; by ſeparating the *coccyx*; by giving ſome ſmall broth, or weak cordial; and by always taking care to urge the woman to make water, from time to time, if the labour be long.

She may, when ſhe judges it to be proper, ſtrengthen the efforts of the mother and child,

by making the woman ſneeze or vomit; by ſternutatories, or emetics; or by exciting her to ſtrong pains, by irritating clyſters. Laſtly, if ſhe ſee the head has got into the paſſage, ſhe ſhould watch, to take advantage of ſome good efforts, to make the ſhoulders advance into it without delay: and if ſhe ſucceed in this, ſhe may conſider the delivery as completed.

II. But, if the child preſent itſelf by the feet; or the bad poſition, in which it is in the *uterus*, render it neceſſary to reduce it to this ſituation; the delivery muſt be haſtened, becauſe the waters are diſcharged; the child remains dry; and all delays are detrimental.

This is effected without difficulty, as far as the buttocks. But then, ſuppoſing the child has its face forwards, which is common in this ſituation, it is proper to turn it, in order to hinder the chin from catching againſt the bones of the *pubis*. This being done, it ſhould be continued to pull the child gently, till the ſhoulders be within the paſſage: and, if they get through, to manage ſo, that the head may immediately ſucceed them; and advantage ſhould be taken of the dilatation, which the ſhoulders have produced. By theſe means, this delivery may ſucceed; but it is very rare that the volume of the head, while it preſeves its roundneſs, does not create an obſtacle, often inſurmountable.

CASE

CASE II.

Of the difficulty, which proceeds from the child's being dropſical.

IT is only the dropſy of the head, or *hydrocephalon*; or dropſy of the *abdomen*, or *aſcites*; that can do any harm to delivery. The one, by enlarging the head: the other, by tumifying the belly. As to the dropſy of the breaſt, ſuppoſing it ever does happen to children in the womb of their mothers; as it does not ſwell the breaſt, it cannot well be comprized in the cauſes of a hard labour.

Theſe dropſies happen to children in their mothers wombs, as well as after they are born: of which inſtances are not rare. They proceed from the ſame cauſes; which I ſhall not now take under conſideration: becauſe the object here is, not how to remedy the diſorder; but the difficulty, which it occaſions to delivery.

The principal attention of the midwife muſt be, to aſſure herſelf of the reality of the dropſy. For great care muſt be taken, not to employ means which may be fatal, unleſs compelled to it, by the certainty of the exiſtence of the diſorder; or the known inefficacy of all other reſources.

1ſt. The coverings being torn, and the child preſented naked, the dropſy of the brain may be diſtinguiſhed: becauſe the head, which offers itſelf, is flat, and much more extended than it ought to be: becauſe the ſutures, particularly the ſagittal ſuture, are much more diſtant than they commonly are, and the *fonticulus* is ex-

tremely large: and becauſe the interſtices of the ſutures, particularly of the *fonticulus*, are very ſoft, and lax.

2dly. In the ſame circumſtances, the dropſy of the *abdomen* is diſtinguiſhed: becauſe that the child, the head and ſhoulders having paſſed, remains fixed in the paſſage by the belly; and becauſe a hand, well greaſed, being thruſt into the *uterus*, along the breaſt of the child, to the pit of the ſtomach, the largeneſs of the belly is perceived.

In both theſe caſes, the firſt endeavour ſhould be, to procure the delivery in the common way; which often ſucceeds, when the dropſy is not conſiderable; or the orifice of the *uterus* gives way to an adequate dilatation. It is proper then to employ, and with due patience, all the expedients which have been enumerated, for the delivery of children that have a very large head.

But, if both theſe expedients fail, and it appear, the woman is on the point of being loſt, by the hardneſs and continuance of the labour, it becomes requiſite to evacuate the waters of the dropſy, by a method that is violent, and attended with certain danger to the child. But the neceſſity there is to ſave the mother, muſt juſtify the taking ſo cruel a ſtep: eſpecially, as there is little reaſon to hope that children will live, who are attacked in their mothers womb, with two diſeaſes, almoſt always mortal.

I. In the *hydrocephalon*, therefore, *firſt*, the left hand, being well greaſed, muſt be put into the *uterus*, up to the *fonticulus* of the head of the child.

2dly. A trochar of ſufficient length, of which the point muſt be armed with a button of wax,

to

to hinder its making any wound in the introduction of it, muſt be paſſed by the right hand along the left.

3dly. The point of the trochar muſt be guided, by the left hand, to the *fonticulus*; where it muſt be plunged in; and the pointed part being drawn out, the water muſt be ſuffered to diſcharge itſelf.

4thly. By this means the hand will become flat, and paſs eaſily; and the reſt of the body will follow, without trouble; for, in this ſtate, the child is emaciated.

II. In like manner, in the *aſcites*; *firſt*, ſome greaſed fingers of the left hand, muſt be conveyed along the breaſt of the child, to the pit of the ſtomach.

2dly. A long trochar, of which the point is defended with a button of wax, muſt be thruſt, with the other hand, betwixt the body of the child; and the introduced fingers, to the belly of the child.

3dly. The point of the trochar muſt be directed by the fingers, which are in the *uterus*; and puſhed into the belly: and, by withdrawing the puncturing part, the water muſt be diſcharged: after which, the delivery muſt be performed ſpontaneouſly.

But, in both theſe caſes, before theſe fatal practices be executed, the child ſhould be baptized. This would be eaſily done, if any of its members appeared externally; but as none do appear, it muſt be by injection: which is an authorized uſage, as we ſhall ſee at the end of the treatiſe. A ſyringe, with a long pipe, ſhould, therefore, be had full of warm water; and, by the help of the left hand, introduced into the

uterus. The pipe ſhould then be conducted to ſome part of the child diveſted of the coverings; and, by puſhing with the right hand, the piſtons will throw the water on the child; the midwife pronouncing, at the ſame time, the ſacramental words.

CASE III.

Of the difficulty, which comes from the child's being of a monſtrous form.

THE generation of monſters is a myſtery in nature, into which the curioſity of philoſophers cannot pry hitherto; nor will perhaps ever, according to what we may reaſonably preſume. It is diſputed, whether monſters come from the conjunction of two germs; or, be originally formed ſo. The firſt of theſe ſuppoſitions crouches under the weight of the objections, which load it: as to the other, it has been dared to aſk, what reaſons the author of nature could have to form them? and, as none could be imagined, there has been little wanting, to have the temerity of blaming him.

I avoid engaging myſelf in ſuch intricate difficulties; becauſe I cannot flatter myſelf with being able to reſolve them: and, moreover, I am ſenſible, ſuch vain ſpeculations are of no uſe in the art of midwifery; which is the proper ſubject before us. It is ſufficient, therefore, to remark, that there are, in general, two ſorts of monſters: ſome, in whom there is a defect, with reſpect to certain parts; parts that are wanting, *a defectu*: and others, where there is a redundancy

dancy of ſome limbs which are ſuperfluous, *ab exceſſu.*

The firſt kind of monſters cauſe no impediment to delivery: but the ſame does not hold good of the other: as it may be eaſily believed.

Nevertheleſs, among the monſters of the latter kind there are ſome, which do more harm to delivery than others. A child, for example, which ſhould have two heads, would be more difficult to deliver, than one which ſhould have three arms: and one which ſhould have three arms, than another which ſhould have four ears on its head; or ſix fingers on its hand.

It is often very difficult, to diſtinguiſh when the child is monſtrous. An attentive reflection, and careful examination, may, nevertheleſs, enable any one to form a judgment, after having torn the coverings, and handled the child naked, whether it have any conſiderable deviation from its natural ſtate. It may be thus perceived, when it has two heads, if it preſent itſelf by the head: or, when it has four legs, if it preſents itſelf by the feet. A certainty being had of the ſtate of the child, it is requiſite to do all that is poſſible, to procure its coming forth, however monſtrous it may be; and to employ, for this end, all the means which have been propoſed for difficult deliveries: as unctions, and dilatations of the orifice; ſeparations of the *coccyx*; fomentations; clyſters; ſternutatories; and emetics. But when it appears, that all theſe means are in vain; and the ſpirits and ſtrength of the mother fail; it is proper, in ſuch an exigence, in order to ſave her, to diſmember the child in the *uterus*, after having baptized it; as has been mentioned in the preceding caſe. But

I do not believe, that any midwives are either courageous or expert enough for such an operation: and therefore adviſe the calling in an *accoucheur*.

CASE IV.

Of the difficulty, which proceeds from there being two children in the uterus.

TWINS have each their particular afterbirth; adhere each to a diſtinct *placenta*; are incloſed in ſeparate coverings; and have no contact with each other, till theſe coverings be torn; which happens but rarely in the *uterus*, at the approach of the delivery; and never at all in the place where they touch: becauſe, in that place they are ſtrongeſt by being conjoined. In ſhort, twins are as different pregnancies, entirely diſtinct from each other.

It may be ſuſpected, in the laſt months, that a pregnant woman bears two children, when her belly is very large and heavy: when it ſeems ſeparated into two parts, by a line in the middle: when two different motions are diſtinguiſhed in it, in two different places. But there is, however, no certainty of the exiſtence of twins, till the *uterus* be ſufficiently open in the labour, to admit of a finger being introduced; by which two children may be felt.

Twins impede delivery, from two reaſons. *Firſt*, Becauſe they mutually hinder each other from making the turn in a regular manner, at the approach of delivery: which occaſions that one of them is almoſt always ill placed; and ſometimes even both of them. *Secondly*, Becauſe

cauſe both ſometimes preſent themſelves to the paſſage: or, at leaſt preſent there ſome of their members, as a leg, or an arm; which prevents, or renders difficult, the coming out of that, which preſents itſelf rightly.

After having diſcovered that there are twins, it is proper to begin by delivering that, which is neareſt the paſſage. If it preſent itſelf by the head, with the face downwards, as happens when it has made a regular turn, it ſhould be delivered in that manner: obſerving all the neceſſary precautions; and giving all the aſſiſtance poſſible to the woman in labour. If the *placenta* follow the child, after having tied the cord at two fingers breadth from the navel, it ſhould be cut; and the child ſhould be given to the nurſe; in order to apply ſolely to the delivery of the other child. But if the *placenta* adhere to the *uterus*, as is common; inſtead of ſeparating it, which would occaſion too great an effuſion of blood, two ligatures ſhould be made on the cord: the one near the navel of the child; and the other four fingers breadth diſtant: after which, the cord ſhould be cut betwixt them; the child given to the nurſe; and the extraction of the *placenta* deferred, till after the delivery of the other child: which ſhould be attempted without delay.

If the firſt child preſent itſelf by the feet, or in any bad poſture, which makes it neceſſary to reduce it into this ſituation, the delivery ſhould be made in this manner; taking great care, that the two feet which are gained belong to the ſame child: obſerving attentively, alſo, when the child is come forth to the buttocks, to turn it, in order to place it with the face downwards.

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Commonly the two after-births come out then, with the other child; and the delivery is completed. In any caſe, after having made two ligatures in the cord, and cut it betwixt them, the child ſhould be given to the nurſe; and it ſhould be endeavoured to ſeparate the double *placenta* which adheres to the *uterus*; in which the method ſhould be purſued, that will be laid down in the following chapter.

CHAP. III.

Of the hard and difficult labours which proceed from the after-birth.

THE after-birth comprehends the *placenta*, the cord, and the coats, or coverings, of the child. As each of theſe parts may do harm to delivery, ſeveral different caſes may reſult thence.

CASE I.

Of the difficulty which proceeds from the placenta's *preſenting itſelf the firſt in the paſſage.*

THE *placenta* remains connected with the *uterus*, during the labour, and it is an advantage: becauſe the delivery is made by this means, without much loſs of blood. But, towards the end of the labour, the kickings of the child, the contractions of the *uterus*, and the pulling by the cord, which the child draws along with it in coming forth, ſeparate it; and

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it generally follows the child. But this order is inverted, when two circumſtances happen. Sometimes the *placenta* ſeparates, as ſoon as the child; and falls, even before it, on the orifice of the *uterus*; which is the caſe to be conſidered here. At other times, it remains connected with the *uterus*, after the paſſing out of the child: which makes the caſe we ſhall ſpeak of in the next article.

The *placenta* ſeparates itſelf ſooner than it ſhould, in two caſes. 1ſt. When the umbilical cord is too ſhort; or, which amounts to the ſame, when it is twiſted around the child, or any of its limbs. In ſuch caſes, the child in turning, draws the cord; and the cord ſeparates the *placenta*. 2dly. When the woman makes any falſe ſtep, falls, or ſuffers too ſtrong a ſhake, towards the end of her time.

This accident does not commonly happen, in either of theſe caſes, but to women who have their *uterus* weak, thin, and not pulpous: or relaxed and glutinous, which occaſions the union with the *placenta*, not to have a ſufficient ſtrong adheſion.

When the *placenta* is ſeparated ſooner than it ſhould be, two bad conſequences follow from it. The one is a profuſe hœmorrhage, during the labour, which is dangerous to the woman. This hœmorrhage happens, becauſe the cecal veins, or veinous *appendices*, are diſengaged from the *placenta*; and diſcharge the blood with a full ſtream, into the *uterus*. The other is, that the *placenta* falling at firſt upon the orifice of the *uterus*, weakens by its ſoftneſs, the effects of the efforts, that the head of the child would make: which renders the labour more long.

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It is proper, therefore, to haſten the delivery: as the woman is in danger in this ſituation. For this reaſon, if the orifice of the *uterus* be ſufficiently open; or, if it be not ſo, after having ſufficiently dilated it; the body, which preſents itſelf ſhould be examined: and it may be judged to be the *placenta*, if it felt to be a ſpongy ſoft ſubſtance. It ſhould then be attempted, to diſpoſe of it, to the right, or left, in order to reach the coats of the child; which muſt be torn by the nails to diſcharge the waters. But, if there be too much trouble in putting aſide the *placenta*, the method may be purſued of tearing it, and afterwards the coats which are under it; in order to give a ready vent to the waters.

Theſe waters being diſcharged, the hœmorrhage will be diminiſhed near half; becauſe the *uterus* will then contract itſelf; and, by that means, contract in proportion, the cecal veins, or veinous *appendices*, through which the blood flows. It is proper, nevertheleſs, to perſevere in making all poſſible diſpatch; and, having diſcovered the ſituation of the child, by the tearing the coverings, to deliver it by the head without delay, if the head preſents itſelf; or by the feet, if the feet preſent themſelves; or the bad poſition which the child has in the *uterus* makes it neceſſary, to reduce it to that ſituation: obſerving, in both theſe caſes, all the precautions which have been ſo often recommended; accordingly as they are proper to each kind of delivery. The infant being come forth, and the *uterus* contracted, the hœmorrhage diminiſhes, or ceaſes; and there is nothing more required, than to leave the delivered woman at reſt, and confine her to boiled meats, to avoid fever.

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I have only one reflection to add here; which is, that if the *placenta* have already got through the paſſage, and fallen into the *vagina*, it is neceſſary then to tear the coverings immediately; to diſcharge the waters; to put the *placenta* into the *uterus*, by bending the upper part of the body of the woman; and, to procure at laſt, the coming forth of the child, ſeparately from its coverings: although it has happened more than once, in this caſe, that the child has been delivered with all its coverings.

CASE II.

Of the difficulty which there is, to deliver the woman, when the after-birth, inſtead of coming out after the child, remains in the uterus.

THE *placenta* remains connected with the *uterus*, after the coming out of the child, from two cauſes. The firſt is, when the *uterus* is thick and pulpous; which makes it incorporate itſelf intimately with the ſinuoſities of the *placenta*, and ſtraitly embrace the eminences of it, which are buried in its ſubſtance. The ſecond is, when the *placenta* is bigger than ordinary, or is itſelf more pulpous; and, conſequently, more cloſely connected with the *uterus*, and in a greater portion of ſurface.

When it it is found, the *placenta* reſiſts being extracted, after the coming out of the child, two ligatures muſt be made on the cord: the one, at two fingers breadth from the navel; the other, four fingers higher. After having cut the cord betwixt them, the child muſt be put away,

away, in order to be at liberty to attend ſolely to the extraction of the *placenta*.

The midwife ſhould then take hold of the umbilical cord with her left hand, after having covered it with a piece of worn, and dry linen, to hinder it from ſliding through her hand. In this poſture, ſhe muſt take care not to draw the cord directly towards herſelf, which would be the way to occaſion a reverſing of the *uterus*; but ſhe muſt introduce the middle finger of the right hand, well greaſed, with butter, along the cord, up to the orifice of the *uterus*, and further, if ſhe can; and, by placing this finger againſt the cord, ſhe muſt puſh it gently, ſometimes to the right, and ſometimes to the left; ſometimes upwards, and ſometimes downwards; to move the *placenta*, and make a ſeparation which often ſucceeds.

If this firſt trial fail, it would be well to ſuffer the *uterus* to contract a little: becauſe it is certain, that, in contracting, it will ſeparate from the *placenta*; which cannot contract in like manner. But there is reaſon to fear, that the orifice of the *uterus* contracting in proportion, may cloſe up all entrance into the *uterus*. This inconvenience may, nevertheleſs, be prevented, by holding, for a quarter of an hour, the hand in the orifice, to keep it open: after which, a new attempt may be made; and, according to appearance, with more ſucceſs.

But if the *placenta* reſiſt ſtill, there is a neceſſity to put the hand along the cord, to the *placenta*, to force a ſeparation. Care muſt be taken not to lay hold of it by the edge, becauſe a miſtake may be made, and it may be confounded with the *uterus*; which would be fatal. But

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it may be taken hold of, where the cord is conjoined to it, by thruſting the fore finger under the ramifications of the great branches of the umbilical veins and arteries; the finger being uſed to move, and ſeparate the *placenta*.

The miſchief is, that ſometimes in the firſt trials, by drawing the cord too ſtrongly, they break it, or tear it off; and nothing then remains, for a guide to the *placenta*, in order to ſeparate it by the fingers, as we have juſt mentioned. It may be well conceived, to what danger the delivered woman would be expoſed, if hold ſhould be taken of the *uterus* inſtead of the *placenta*. It is proper, in ſuch a caſe, to employ an intelligent perſon who knows how to ſeek for the *placenta* at the *fundus* of the *uterus*; who can diſtinguiſh it from the ſurface of the *uterus*, by the great ramifications of veſſels, which are in its center; and who, after having examined the whole, can ſeparate it by putting his finger into the *placenta*, as has been ſaid above. But if any edge of the *placenta* be already divided from the *uterus*, which often happens, the contractions would be much more eaſy; becauſe the ſeparation may be continued to be made from this place, by pulling with one finger, the ſeparated piece of the *placenta*, and puſhing back the *uterus* with another.

The hand introduced into the *uterus*, may, at the ſame time, be made uſe of, to draw out, or take away, any clots of coagulated blood; and even any bits of the *placenta* which may be found there. But this need not hinder injections being made into the *uterus*, for ſome days, with warm decoction of mallows, marſh-mallows,

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and linſeed, in order that no foreign matter may be left there.

It would, perhaps, be thought extraordinary, that I ſhould not propoſe any of the remedies that the greateſt part of authors recommend ſo earneſtly, to procure the coming away of the *placenta* when remaining in the *uterus*. But I have never found any virtue in theſe remedies: and I do not chooſe to perpetuate chimerical prejudices, by recording medicines I do not approve.

CASE III.

Of the difficulty which proceeds from the umbilical cord's coming out before the child.

THE umbilical cord generally follows the child in delivery: but ſometimes precedes it; and preſents itſelf firſt to the paſſage: which is the caſe we are to treat of here.

This accident happens commonly in one of the three following circumſtances. 1ſt. When the cord is very long and pendant. 2dly. When the child is long kept in the orifice; which gives time to the cord to ſlide thither. 3dly. When the waters are abundant, and draw with them the cord, in flowing out.

In general, the cord may get into the paſſage, in two different circumſtances: either when the coverings are ſtill intire; or when they are torn. In the laſt caſe, it is eaſily known, that the cord is fallen into the paſſage; becauſe it may be touched naked. It may be known, in like manner, in the other caſe, through the coverings: although it cannot be diſtinguiſhed

diſtinguiſhed ſo certainly nor eaſily: which ſometimes creates a neceſſity of tearing the coverings, to form a poſitive judgment: and this is, indeed, always the ſafeſt method; becauſe the delivery will be more eaſily performed.

This being done, if the child preſent itſelf by the head, the cord ſhould be put on one ſide; and ſhould be held there by the end, with the fingers of one hand, till the firſt effort, which comes, puſhes the head of the child into the paſſage. The conſequences of which, take away all cauſe of apprehenſion, as to the coming down of the cord. The delivery may be afterwards made in the common manner; obſerving the precautions ſo often recommended.

But if the child preſents the feet, or the bad poſition in which it is in the *uterus*, renders that ſituation neceſſary, expedition ſhould be uſed to obtain it; after having put the cord aſide, and within the orifice: which ſhould be done with all the requiſite care: and then the reſt of the delivery will be eaſy.

There is a caſe, which often happens, that ſhould not be omitted, where the cord embarraſſes, and retards delivery. This is, when it is once or twice entwined round the neck of the child. If theſe windings round the neck be looſe, there is no occaſion to regard them; but, if they be ſtrait, and the child be ſuffered to come forwards, in that ſtate, either it will be ſtrangled, or it will make a violent ſeparation of the *placenta*; and, ſometimes, even cauſe the *uterus* to be reverſed.

It is proper, therefore, to afford a quick relief, before the child has got further in the paſſage. In order to this, the woman ſhould be

placed with her face downwards, her body loweſt, and buttocks higheſt, in order that the *uterus* may be thruſt back into the belly, and the child into the *fundus* of the *uterus*. Advantage muſt then be taken of the room which this ſituation gives, to paſs once, or twice, if it be neceſſary, the cord, above the head of the child; and to free it from the neck: after which, nothing more remains than to conduct the delivery according to the common rules.

CASE IV.

Of the difficulty which comes from the coverings.

IT has been already remarked, that the waters of the *uterus* muſt be retained in the natural delivery; in order to facilitate the motions of the child, in its coverings; to preſerve the ſuppleneſs and lubricity of thoſe coverings and the child; and to hinder the inflammation and ſwelling of the inner ſurface of the *uterus*.

Conformably to this principle, the waters are ſuffered to form themſelves; that is to ſay, to collect in the *vagina*, in a bag, made by the diſtenſion of the coverings, till ſuch time as the head of the child has got within the paſſage. Then the action of the child on the waters of this bag, tears the coverings, which form it; the waters themſelves are diſcharged; and the delivery is happily performed.

But it ſometimes happens, theſe coverings are ſo ſtrong, or thick, that the efforts of the child are not ſufficient to break them; which ſtops the progreſs of the delivery, and hinders the child from coming forwards. To remove this

this obſtacle, the coverings ſhould be torn, by the midwife: who ſhould not neglect to do it: after which, the delivery is attended with no farther difficulty.

I muſt only caution the midwives, who have but little experience, 1ſt. That theſe coverings muſt not be torn till there be a full certainty, that half the head of the child has got into the paſſage: in order that the ſecond waters, which are behind the child, and of which the preſence is ſtill neceſſary, may not be diſcharged. 2dly. That it is proper, to tear the coats with the nails, which are ſufficient for this operation; or if that ſhould not be practicable in any caſe, with a little biſtory, very ſhort, which muſt be conveyed thither between the fingers.

CHAP. IV.

Of hard and difficult labours, from cauſes merely accidental.

CASE I.

Of the difficulty, which proceeds from abortion.

I HAVE no deſign here to treat of abortion, in the full extent, which the importance of the ſubject may ſeem to demand; becauſe I have already ſpoken amply of it, in the *treatiſe of diſeaſes in women, book* III. *chap.* 12. I do not think, moreover, that it is proper for midwives to load themſelves with much theory concerning abortion: all that is material for them to

know, may be reduced to the three following articles.

I. How they ought to conduct themſelves in the caſe of a pregnant woman, where there is a danger of a miſcarriage, but not ſuch as is certain.

II. What is proper for the midwife to do when the abortion is certain.

III. Laſtly, How ſhe ſhould act, if ſhe be ever called to a woman, who has procured the abortion herſelf, but who, frighted with the danger, begs ſome aſſiſtance.

ARTICLE I.

How a midwife ought to conduct herſelf in the caſe of a pregnant woman, where there is a danger of a miſcarriage, but not ſuch as is certain.

IT muſt be underſtood here, that what is ſaid relates only to hurts merely accidental, which come from ſome exterior cauſe; ſuch as a fall; falſe ſtep; blow on the belly; an obſtinate cough; vomiting; or ſprain from the imprudence of riding, dancing, running, ſquall-ing, or lifting any burthen. If, in conſequence of any of theſe accidents, a pregnant woman perceive pains in her loins, or belly; if her child ceaſe to move, or move but weakly; or, what is ſtill more concluſive, if any diſcharge of bloody *ſerum*, or blood, happen; there is a juſt reaſon to fear a miſcarriage. Though none of theſe ſigns are deciſive; not even the bloody *ſerum*, or the flooding of blood: for theſe diſcharges may come from the *vagina*, or the orifice of the *uterus* ſlightly opened.

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In theſe circumſtances, if the midwife be called firſt, as is moſtly the cuſtom, ſhe ſhould make the pregnant woman be put to bed: direct nine or ten ounces of blood to be taken from her arm: give her one or two ſpoonfuls of orange flower water, with ſome ſugar: adminiſter a clyſter to her, with a decoction of mugwort and mother-wort, into which are put two ounces of oil of ſweet almonds: let her take a potion with the diſtilled waters of plaintain, and milfoil; to which are added, maſtich, and the roots of biſtort, and tormentil, powdered, and the confection of kermes: apply embrocations, on the belly, of theriaca, diluted with red wine; or fomentations, with the decoction of red roſes, plaintain, knotgraſs, and balanſtines: and put on Madam Fouquet's plaiſter.

But it would be a more prudent method, if the thing be ſerious, to call in a phyſician, who ſhould take the conduct of this treatment on him; as being more ſuitable to his abilities than to thoſe of the midwife. She, on her part, ſhould content herſelf with examining if the child be in its place, or be ſunk from it: if its motions be natural, or weak and languid: if the *uterus* be open or cloſed; and whether the diſcharge augment or not; in order to be able to judge whether the danger of a miſcarriage increaſe or diminiſh.

Theſe ſorts of alarms terminate in three manners: ſometimes the accidents ceaſe, by repoſe or remedies; the woman does not perceive any more pains or colic; and gets well intirely, and bears her child to the full time. But, in this caſe, ſhe ſhould be admoniſhed to obſerve great caution. Sometimes the accidents go on

augmenting, the belly ſinks, there come on frequent cutting pains, which paſs from the loins downwards; the flooding increaſes; the *uterus* opens more and more; and the abortion is confirmed. Sometimes, laſtly, things remain in the firſt ſtate, with a diſcharge of blood, which continues, but is not great: the pains continue alſo, but are tolerable; and the woman flatters herſelf ſhe has nothing to fear from her ſtate. But we are going to examine theſe two caſes in the following article.

ARTICLE II.

What it is proper the midwife ſhould do, when the abortion is confirmed; or that, without being ſo, the accidents continue, though leſs ſtrongly, and with a conſtant diſcharge of blood.

THESE two ſtates are much the ſame. All the difference betwixt them is, that, in the firſt, the abortion is beginning; but is not ſo near as in the other; though inevitable. In order, that the midwife may be ready to perform her duty in both theſe two kinds of abortion, it is proper ſhe ſhould know:

That abortion is a premature excluſion of the *fœtus*, already conceived, however ſhort the time may have been ſince:

That there may, conſequently, be abortions in every time of pregnancy, even to the end of the ninth month, and the beginning of the tenth, at which period, the child has acquired all the neceſſary growth; and the excluſion is then a natural delivery:

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That, an uſage, for which no reaſon can be given, prevails of calling, the abortions of the firſt and ſecond months of pregnancy, and ſometimes even thoſe of the third, falſe germs: though they are real conceptions, however ſmall the *fœtus* may be, which is contained in them:

That it is proper to give the name of abortion to all the excluſions which are made in the reſt of the progreſs of pregnancy, even to thoſe of children of ſeven or eight months; with this difference only, that, in the abortion of four or ſix months, the child is not capable of living; becauſe it is not yet perfectly formed: whereas the children are often capable of living in the ſeventh and eighth month; becauſe, then, their conformation is more finiſhed; and approaches more to that perfection which is found at the end of the ninth month:

That the abhortions of the two firſt months are made without pain, hœmorrhage, or trouble: or with very little. *Without pain*; becauſe the germ, that is to ſay, the after-birth, which contains the *embryo*, does not adhere to the *uterus*, or very ſlightly: on which account, it is eaſily ſeparated. *Without hœmorrhage*; becauſe, in the firſt caſe, the cecal veins, or veinous *appendices*, are not open; and very little ſo, in the ſecond caſe. Laſtly, *without trouble*; or with very little; becauſe the germ, which is not larger than a pidgeon's egg, ſlides eaſily through the orifice of the *uterus*, carried along with the diſcharge of blood that is made. That the other abortions are difficult and painful, in a greater degree, even than in natural deliveries, in which the child is larger; for ſeveral reaſons. 1ſt.

Becauſe, in abortions, which come from a violent cauſe, the divulſion of the *placenta* is always made with force, and conſequently with pain. 2dly. Becauſe this violent and quick devulſion of the *placenta*, tears almoſt always, many veinous *appendices* of the *uterus*, that have no time to unſheath themſelves, which occaſions their diſcharging the blood more abundantly, and longer. 3dly. Becauſe theſe abortions are made when the orifice of the *uterus* has been mollyfied by the long ſtay of the child, as in a natural delivery. 4thly. Becauſe the miſcarriage does not aid by its kicking its own excluſion, or but in a ſmall degree: whereas the child of full nine months, which is ſtronger, does aid it effectually. 5thly. Laſtly, Becauſe the after-birth, which in abortions is bigger than in a natural delivery, ſtops in the paſſage, through which the child, had it been leſs, could have paſſed without difficulty; and conſequently renders delivery longer, and more hard. According to theſe facts, which are certain, the midwife may regulate the prognoſtic ſhe muſt make, and the conduct ſhe muſt purſue: not forgetting, that, as, in all abortions, the flooding is great, it is proper, in order to the making it ſtop, to haſten the coming out of the miſcarriage: ſince it is the only means which can ſucceed.

I. If the abortion be already begun, and the *uterus* be open enough to permit ſome of the fingers to be introduced into it, they ſhould be uſed, to pinch the coverings, and tear them, to cauſe a diſcharge of the waters. If the head of the child preſent itſelf there, in a proper ſituation;

tion; or if it can be reduced to one; the delivery ſhould be made in that manner.

But if the child preſent itſelf by the feet, or if there be a neceſſity to reduce it to that ſituation, which ſhould be done with all the dexterity poſſible; the child ſhould be delivered by the feet: none of the precautions, which this kind of delivery demands, being neglected. As ſoon as the child is come forth, if it ſhow any ſigns of life, by its cries or motions, it is proper to think of making it be chriſtened.

In an abortion, attended with great flooding, the *placenta* is already ſeparated, and preſents itſelf to the orifice after the child. But, if its magnitude hinder its paſſing; for the *placenta* is larger in abortions than in deliveries, which happen at the full time, as has been remarked; it is proper to lay hold of it at the center, under the diſtributions of the great branches of the umbilical veſſels, which renders it eaſy to be drawn out. If, however, nothing elſe will do, the *placenta* ſhould be torn, in order to draw it out by pieces.

As to the delivered woman, after having put her to bed, ſhe ſhould have ſome broth, or weak cordial; and if the pulſe riſe four or five hours after, which foretells the coming on of a fever, ſhe ſhould be bled in the arm; at leaſt, if the flooding have not been great in the labour. With reſpect to what remains, a prudent midwife will not take upon herſelf only, the charge of the management of a delivered woman, in a caſe always difficult, and often dangerous; but will require the aſſiſtance of a phyſician.

II. In the ſecond caſe, the abortion is not ſo near: but it is not leſs inevitable. For a long

long time, it was hoped, and is ſometimes ſo yet, to be able to prevent it in ſuch caſes, but it is a conſiderable period, ſince experience ought to have diſabuſed every body, with reſpect to the ground of ſuch hopes. The pains of the belly, the cutting pains, and the uneaſineſs in the loins, continue, although with variations: the flooding remains, ſometimes more copiouſly, ſometimes leſs, but, on the whole, always increaſing: and the woman grows weak, loſes her ſpirits, and ſeems more ſpent from day to day. All this evinces, that the *placenta* is ſeparated in one part only, which ſupports the continuance of the flooding, without abſolutely cauſing the abortion.

As it is certain, the *placenta* ſeparated from the *uterus*, in one part, can never re-unite with it, no hope ſhould be entertained, that the pregnancy can go on to the full time. The woman gradually ſpent, periſhes with her offſpring, if no aid be given her: and the only effectual ſuccour ſhe can receive, is to be delivered. All the other remedies that are employed, or are found in authors, are abſolutely inefficacious. But this delivery muſt be made by force; for there is not any diſpoſition, that leads ſoon to a natural delivery. This is, therefore, the conduct, which all the *accoucheurs* purſue. I have been called in two or three times, to caſes of this kind; and was very much convinced of the deſtruction both of the mother and the child, whatever other part ſhould have been taken. I therefore thought it clearly right, to determine for the forcible delivery, conformably to that wiſe reflection of Celſus: *In evidenti mortis periculo ſatius eſt remedium adhibere incertum*,

tum, quàm nullum. But, I confeſs, that in adviſing this method, I felt myſelf greatly affected: becauſe I was ſenſible of the danger of what was going to be undertaken.

If there be time, the parts may be mollified, for ſome days, with *peſſarius*, made with the pulp of emollient plants; or only dipped in an emollient decoction; provided they be often renewed. Emollient fomentations upon the *hypogaſter*, or belly, may be applied: and emollient clyſters may be given.

When this operation is undertaken, the firſt thing to be done is, to make the perſon that is to be delivered, adminiſter: and, after having well greaſed the orifice of the *uterus*, and the *vagina*, and ordered the woman to make water, and empty the *rectum*; one finger is firſt to be introduced into the orifice; and moved different ways, to dilate the opening. Then a ſecond finger muſt be introduced, as ſoon as it can; and, by ſpreading theſe two fingers, room is afterwards made, for the introduction ſucceſſively, of a a third, and fourth, and even of the thumb, cloſe together, and forming, as it were, a wedge. Then, by ſpreading the fingers and thumb, they are uſed as a *dilator*; and the orifice of the *uterus* is gradually opened by them, ſo as to give room for the introduction of the hand. The proceeding is then, to tear the coverings; to let the waters be diſcharged; and, at the ſame time, to turn the child; which ſhould be delivered by the feet. If it ſhew any ſigns of life, by its motions, or cries, it muſt be given to ſome ſenſible perſon, to be immediately chriſtened: while the midwife remains employed in extracting the after-birth, of which

ſhe

ſhe endeavours to deliver the woman, by all the means that have been directed above. After this, the woman is to be put to bed; ſome cordial given to her; and ſhe muſt be left to take her reſt for half an hour, or an hour, before any broth be given to her. But, if three or four hours after, her pulſe riſe, ſhe ſhould be let blood in the arm; nine or ten ounces: which muſt be repeated, if the fever prevail; in order to check it; and diminſh the inflammation of the *uterus*.

I do not adviſe midwives to undertake ſo difficult and dangerous a delivery: nor do I even believe there is any *accoucheur*, who is imprudent enough to perform this operation, without having called in ſome phyſicians to determine whether or no, it be neceſſary; to be witneſſes of his conduct; and to preſide over the treatment, which the conſequences make requiſite.

ARTICLE III.

How a midwife is to act when called to a perſon who has procured abortion by her own means.

I DO not believe midwives, to be ever culpable of the crime of being accomplices with girls or widows, who, to preſerve their honour, of which they have taken very little care, reſolve with themſelves, to deſtroy their own offſpring. But it often happens, that theſe unhappy creatures, frighted with the conſequences of their act; and, being afraid of their own death, apply for aſſiſtance; and, with great reaſon, for the nature of the medicines and practices they have employed, the efforts of the *uterus*, the violent

violent ſeparation of the *placenta*, and the tearings of the veinous *appendices*, and ſometimes even of the coat of the *uterus* itſelf, cauſe violent pains, and convulſions in the *uterus*; produce an exceſſive flooding; bring on a conſiderable inflammation followed by a gangrene; or, at leaſt, an ulcer; and give riſe almoſt always in the ſequel, to ſchirrous tumours, ſhirrhuſſes, and cancers in the *uterus*. If the women, who run into this extreme of folly, knew to what dangers and miſchiefs they expoſed themſelves, I imagine the fear of death would reſtrain ſome of thoſe, which the fear of God cannot.

In theſe calamitous circumſtances, they often implore ſuccour of the midwives. I have been called in myſelf four or five times, under ſuch circumſtances; and whatever horror I might have in my heart, for ſuch perſons, I did not withhold my charitable aſſiſtance from them; and ſucceeded, in ſaving ſome.

Midwives may be called, on theſe occaſions, in two different ſtates of the caſe. Where the abortion is abſolutely produced; but the child and the after-birth remain yet in the *uterus*: or where the child is borne, and nothing more remains than to find a remedy againſt the exceſſive flooding; which the medicines employed, and the violent ſeparation of the *placenta*, have excited.

In the firſt caſe, in order to diminiſh the flooding, expedition muſt be uſed to extract the child; and, in order to that, the midwife muſt employ all the means we have directed in the preceding article. If the midwife perceive any motion of the child, or it cry, however weakly, after having made two ligatures on the cord, the

one

one near the navel of the child, and the other ſome inches higher; and, having cut the cord betwixt them, ſhe muſt give the child to ſome grave perſon to chriſten it; and endeavour to bring it to life, by making it ſuck ſome drops of wine with a little ſugar. As to herſelf, ſhe muſt complete the buſineſs of her office, by the extraction of the after-birth. By theſe means, the firſt caſe is reduced to the ſecond: and there is nothing more to be done than to endeavour to moderate the flooding.

In order to this, after having placed the patient on a mattraſs of oaten ſtraw, through which the blood may run, ſhe ſhould be ſuffered to have a little repoſe, and even ſome broth. But a little while afterwards, ſhe ſhould be bled in the arm, in the quantity, that the ſtate of her pulſe will admit. The bleeding ſhould be repeated afterwards, if the ſtrength of the patient permit it, but in a leſs quantity.

She ſhould have, for her drink, filtred whey, or what is better, chicken-water, and ſmall cups of veal broth, in which the roots of great comfrey have been boiled. She ſhould take, alſo, every hour, two or three ſpoonfuls of a potion, made of a decoction of plaintain, and the great comfrey, five ounces of each, in which has been put the powdered roots of tormentil, biſtort, and dropwort, each half a drachm; of dragon's blood, and *Briançon* chalk, powdered each one drachm; and of the confection of alkermes, two drachms; to which muſt be added ſome *lilium*; if the ſtate of the pulſe require it; or ſome drops of the anodyne tincture, if it be neceſſary, to calm the pains, and the convulſive motions of the *uterus*.

After

After all, the beſt method is, to give at firſt, the decoction of the root of the great comfrey; into one pint of which have been poured, fifty-five, or fifty-ſix drops, of the white water of Rabel, and an ounce and a half of the ſyrup of capillaire. If the diſorder be preſſing, as it is always at the beginning, the patient ſhould be made to drink a whole pint in the day; giving it warm, and a little at a time. The doſe may be diminiſhed afterwards, in proportion as the flooding ſhall diminiſh. If the caſe be very urgent, it is proper to make injections into the *uterus*, with the warm ptiſan. I have remarked in *the treatiſe on the diſeaſes of women*, that an *accoucheur*, in a ſimilar caſe, being unprovided with every other remedy in the country, made injections into the *uterus*, with warm vinegar, not only without danger; but even with the greateſt ſucceſs. As to the reſt, a midwife, while ſhe haſtens to give proper aſſiſtance, has two other duties to perform. The firſt is, to procure a confeſſor to be ſent for to the patient, declaring the caſe to be urgent, and ſuch as will admit of no trifling. The other is, to make a phyſician be called in, who may aid her, by his advice; avowing, that ſhe ought not, nor can not, take the charge upon herſelf alone, in a matter of ſo much difficulty and conſequence.

CASE

CASE II.

Of the difficulty which proceeds from the child's being dead.

THIS title comprizes two cases, which it is proper to treat of separately. The first concerns the extraction of a dead child in the *uterus*: the second, the extraction of the head, when separated from the body of the child, and remaining in the *uterus*.

ARTICLE I.

Of the extraction of a dead child.

THE child may die in the womb of its mother, at two different times. It may happen in the course of pregnancy, from a fall of the mother, by any stroke received on her belly, from any violent disease which comes on, as a fever, pleurisy, dysentery, small-pox, *&c.* or by a disease of the child itself. It may happen, also, in the time of delivery, when the labour is very long; when the child is exposed to violent compressions in it; where it remains a long time in the passage; and when it is treated too roughly.

The death of the child is presumed in the course of pregnancy, from the nature and violence of the causes, which have preceded, and which might be reasonably supposed to occasion its death: as a fall of the mother, a blow on her belly, or a disease which she has had. It may be presumed also, because the mother no longer perceives

perceives any motion in the child; her belly ſinks; her breaſts grow flaccid; ſhe is often ill without any manifeſt cauſe; and a ſerous diſcharge, black and fœtid, flows from her *uterus*, *&c.* Theſe cauſes are only conjectural: but this is ſufficient; becauſe in ſuch caſe, it is right to wait till nature itſelf decide. All that is requiſite in the mean time is, to exhort the woman to be careful, and to keep herſelf quiet; to obſerve a proper *regimen*; and to take, from time to time, a little alicent wine, or ſome weak cordial, when her ſpirits are low.

The ſame ſigns appear, in the ſame manner, when the child dies in the labour. But they are not ſufficiently deciſive, to regulate the conduct of the midwife; who muſt exert her utmoſt care of the child, if it be yet alive. In order to be able to leave it, ſhe muſt be very certain that it is dead; and ſhe can not be ſo, till ſhe perceive ſome of the following ſigns; or, what renders the matter ſtill more certain, till ſhe obſerve ſeveral of them.

1ſt. If having introduced the greaſed hand into the *uterus*, up to the navel of the child, the beating of the umbilical arteries be not perceived. But it is neceſſary that the hand reach the navel; for a miſtake might happen, if the umbilical arteries, along the cord only, were touched: becauſe they beat there ſtill, tho' more weakly.

2dly. If the child do not ſuck the finger, when introduced into its mouth, in caſe it can be reached, with that intent.

3dly. If the *placenta* and cord have been a long time come away: which can never happen without cauſing the death of the child.

4thly. If the ſutures of the *cranium*, are lax and pliable; and the bones, that they join, touch each other: which proves that the brain is deſtroyed.

5thly. If the *epidermis* of the body, and particularly of that part of the head where the hair grows, ſeparates itſelf and adheres to the fingers.

6thly. If acrid black ſtinking *ſerum*, flow from the *uterus*; which only happens when the child has been dead a long time; and begins to putrefy. Care ſhould, however, be taken, not to confound this ſerous humour, with the *meconium*, or kind of pitch, which comes out ſometimes, in hard labours: and is the excrement, that the child makes, when the belly is preſſed in conſequence of a bad ſituation; particularly when the buttocks preſent themſelves; which does not decide, nevertheleſs, whether the child be dead or not.

When the midwife is well aſſured of the death of the child, ſhe muſt uſe the greateſt diſpatch, to perform the extraction of it: fortifying herſelf with courage and patience: as this delivery is generally long, and difficult, for ſeveral reaſons.

Becauſe the *uterus*, not being irritated by the motions of the child, the mother has only weak, and few pains and efforts.

Becauſe the child, which cannot ſtretch itſelf out, does not aid the delivery, by puſhing its head againſt the orifice, to open it.

Becauſe the ſoftneſs of the body of the child occaſions its making no reſiſtance: and that, inſtead of keeping itſelf at length, it is rolled up like a ball.

Laſtly,

Laſtly, Becauſe, in the delivery of a dead child, if there be ever ſo little delay, the *uterus* goes into a ſtate of inflammation, which hinders it from contracting itſelf.

The manner of conduct in this delivery, admits of no doubt. If the *uterus* be not open enough, the orifice muſt be dilated gradually, by making uſe of the fore fingers, and the thumb, as a kind of *dilator*, till the hand can be introdced into the *uterus*. Then the coverings muſt be torn; and the waters diſcharged, if they have not been ſo before; and the child muſt be turned, in order to be delivered by the feet: proceeding with addreſs and patience, to avoid hurting the mother. This is the only way of delivering the child: becauſe there is, in ſuch a ſituation, an opportunity of pulling it, by laying hold of the feet, and legs: which is not the caſe when it preſents itſelf by the head. It is true, there is ſome danger, that the head may ſtop in the paſſage, and be ſeparated from the body: but that does not happen, if the precaution be taken to turn the child with the face downwards. Where the ſoftneſs of the body renders this operation impracticable; the dead child may be delivered with the face upwards, without the head's catching on the bones of the *pubis*; at leaſt, unleſs the putrefaction be ſuch, that the head ſcarcely adheres at all, to the trunk: provided a proper attention be given, and too much precipitation avoided.

It follows from thence, that even when the child preſents itſelf by the head; as in the natural delivery of the firſt kind; it muſt be turned, in order to deliver it by the feet: and, for this end, the body of the woman muſt be low-

ered, to render it practicable to push back the *funis* in the belly, and the child in the *uterus*; and, in order to have, by this means, the necessary room to seek the feet; turn the child; and deliver it in that manner.

This rule admits of only one exception, which is, when the head is so far within the passage, that there is no hopes of being able to push it back. In such a case, there is a necessity to draw it out in this posture. As there is no hold of the head, crotchets are generally made use of, which cannot give any ground of fear for a child that is dead; but may be fatal to the mother, if they should happen to get loose.

To employ these crotchets, the left hand well greased, is introduced betwixt the edge of the orifice, and the head of the child. The flat part of the crotchet is slipped along this hand, till it reaches the orbit of one of the eyes; or, what is better, the hollow of one of the ears. Then the crotchet is placed right, and the point thrust into one of these cavities: after which, pulling the handle of the crotchet with the right hand, and directing the head of the child with the left, it is endeavoured to make it come through the passage. But sometimes, in order to succeed, it is requisite, to place a second crotchet on the opposite side: which gives just reason to fear, that one of them, as they are often ill enough secured, getting loose from its hold, may make a very dangerus wound in the orifice of the *uterus*: an accident that sometimes happens.

The head being passed, the rest of the body, for the most part, follows easily enough: but, if the shoulders be stopped in the passage, as commonly happens, it should be endeavoured to introduce

introduce a finger of the right hand, up to the armpits of the child, and uſe it as a crotchet, to finiſh the extraction: and, if the finger cannot reach thither, a crotchet very ſmooth, and without any point, is employed: being thruſt into the armpit; and uſed for making the extraction of the body.

When this extraction is made, every thing is finiſhed: for the after-birth is either already come out of itſelf, or will come out immediately afterwards. Nothing more remains, therefore, than to give the delivered woman ſome broth: and leave her there ſome time at reſt, to recover herſelf. But, ſome hours after, one or two injections ſhould be made, into the *uterus*, with a warm decoction of the root of marſh mallows, to which is added, a little honey; to waſh the inſide of the *uterus*; and clear away the *ſanies*, or froth, that the dead child may have left there.

At this time, the practice is abſolutely changed: and the *accoucheurs* only uſe, for making the extraction of a dead child ſtopped in the paſſage, the crooked *forceps* of Mr. Levret. The ſucceſs of which is almoſt certain, without danger. See above, *the ſummary hiſtory of the art of delivery. Article* II. *No.* 6.

ARTICLE II.

Of the extraction of the head of the child remaining in the uterus.

THE head of a child remains ſometimes in the *uterus*, when the delivery is made by the feet: as has been ſaid above. This misfortune

often happens, when the child cannot be turned on account of its ſoftneſs, and there is a neceſſity to deliver it with the face upwards. Becauſe, in this poſture, the chin catches often againſt the bones of the *pubis*; and the head ſtops there. But this miſchief occurs more particularly, when the child is half putrefied; and the head is, in conſequence of that, looſely fixed to the body.

This accident is very bad. For, in order to deliver the woman in labour, it is proper to extract this head: which is difficult. The head could, indeed, paſs the orifice of the *uterus*: but, in order to make it paſs, it is neceſſary that it ſhould be puſhed from within, or drawn from without; and both are impoſſible; or, at leaſt, very difficult. On one hand, nothing can puſh it from within: for the *uterus*, which is not irritated by any thing, does not contract, or but very weakly: and coughing, ſneezing, vomiting, and all the ſtrainings that can be made, are but a weak ſuccour, when the *uterus* does not act. On the other hand, nothing can draw it from without; for the head, which is round, does not afford any hold.

In theſe circumſtances; it muſt be endeavoured to ſupply, by art, the aid which nature does not furniſh: and different expedients, which we are going to explain, have been deviſed; but are, nevertheleſs, all of them, ſubject to ſome inconveniences.

I. It has been propoſed, to introduce the right hand into the *uterus*; to put two fingers, the fore finger and the middle, into the mouth of the child; to fix the thumb under the chin; and to make uſe of this hold for drawing out the child.

This

This expedient is plauſible, and practicable. For the head, which is ſtopped in the *uterus*, in the delivery by the feet, preſents its baſe to the orifice; and conſequently, it is not difficult, in this poſition, to find the mouth of the child; to introduce the fingers there; and to make uſe of them to draw out the head: and, I believe, they may be effectually made uſe of. But when the child has been dead ſome time, the lower jaw ſeparates; and it is drawn out, without drawing out the head with it.

II. When this misfortune happens, it is propoſed, as a reſource, to take hold of the head with the right hand, by introducing the fore finger along the palate of the child, to the *lacunar faucium*, where it muſt be fixed, extending the other three fingers along the face, and preſſing ſtrongly with the thumb, againſt the occipital.

Hopes have been formed, that, by thus laying hold of the head, it might be drawn out: and it were to be wiſhed, that the ſucceſs would anſwer to this hope. I queſtion, nevertheleſs, whether this method has ever been tried: but it is evident, that a head covered with froth, and blood, would get looſe from the hand that held it: and this expedient could have no other conſequence, than to draw out the head by pieces; which would, however, be one reſource.

III. I ſhould approve much of the following expedient, if it were practicable. It has been propoſed, to have a bandage of linen, worn, but ſtrong, of the length of half an ell; and of the breath of four fingers, to hold the two ends with the left hand, and to paſs the middle, behind the head. After which by, pulling gently the

two ends, the head ſhould be extracted: the coming out of which, into the paſſage, ſhould be aided. I believe this would ſucceed, if it was eaſy to make this bandage of linen paſs behind the head, which is to be extracted. But the thing appears to me impoſſible, or very difficult: and I ſuſpect the method has never been put in practice.

IV. I may ſay the ſame of a kind of ſling, which *Mr. Amand*, an *accoucheur*, has propoſed for the ſame purpoſe. It was very well imagined: but I doubt, whether it has ever been employed.

V. *Mr. Gregoire*, an *accoucheur*, made uſe of an iron inſtrument, formed like a great L; of which, the whole ſurface was ſmooth, and without corners. This inſtrument opened into two parts, which were kept together by a turning joint, the whole length of the longer limb. This inſtrument was introduced into the *uterus*: the two parts being cloſed againſt each other; and it was thus directed, by the left hand, into the hole of the occipital. Then, by opening this inſtrument, the form of a double L was given to it: and, as now the two ends could not come out of the hole of the occipital, the inſtrument ſerved to draw the head out directly.

I do not perceive any inconvenience in this method, which may eaſily be put in practice: becauſe the head, remaining in the paſſage, preſents the whole of the occipital, oppoſite to the orifice, provided all the *vertebræ* of the neck be ſeparated from the head. But it cannot be of any uſe, when the head, in ſeparating from the body, has retained any of the *vertebræ* of the neck.

VI. It

VI. It has been adviſed by ſome, to make uſe of a pointed crotchet, conſtructed as has been explained in the foregoing article, by introducing the left hand greaſed, into the neck of the *uterus*, high enough for the ends of the fingers to reach one of the orbits of the eyes, or the holes of the ears; to conduct the flat part of the crotchet along that hand, up to the orbit, or hole of the ear, where the fingers muſt fix it, to thruſt in the point of the crotchet; to give it, by turning it, the moſt ſtrong and fixed hold; and, by the help of the crotchet, which muſt be held in the right hand, to draw out the head, aſſiſting its paſſage, at the ſame time, as much as poſſible, with the fingers of the left hand.

We have ſeen, in the preceding article, the repugnance there ought to be againſt the uſe of crotchets, in the extraction of a dead child: and it ſhould be yet greater, in this caſe; becauſe it is ſtill more difficult, to reach the orbits of the eyes, or holes, of the ears: there is, beſides, reaſon to fear, in the extraction of a dead child, that in pulling the crotchet, it may looſe its hold, and wound the *uterus*. But this miſchief is yet more to be feared, when they are made uſe of for extracting a head: becauſe the ſeparated head, being moveable, the hold of the crotchet cannot be ſo eaſily made ſecure, as in the fixed head of a dead child.

VII. The moſt ſafe method is to make an inciſion, in the top of the head, along the ſagittal *ſuture*; to take out the brain; to flatten the bones of the *cranium*; and to lay hold of one of the parietal bones, in order to make uſe of it for extracting the head. For this purpoſe, the left

left hand, well greaſed, muſt be introduced into the *uterus*, till the fingers reach the ſagittal *ſuture*; a crooked knife, with a long handle, or a caſed biſtory, muſt be introduced afterwards; and the flat part ſlipped along the left hand, which muſt be kept in its place, to that part of the head, where the fingers touch it. The knife muſt be then turned, or the biſtory thruſt forwards; and uſed for making a long inciſion in the *fonticulus*, and along the ſagittal *ſuture*. The knife, or biſtory, muſt afterwards be drawn back along the left hand, with the ſame precaution and dexterity, as they were introduced. The brain muſt be taken away, in conſequence of the inciſion, by the left hand: the bones of the *cranium* muſt be preſſed to flatten them; and one of the parietal bones muſt be taken hold of to be uſed for drawing out the head.

During this operation, it is proper, that ſome perſon preſs, from the upper part downwards, the belly of the woman, on whom it is performed, to puſh the head againſt the orifice of the *uterus*, and to keep it there in a fixed ſtate. But, with all theſe precautions, this operation is often impracticable: becauſe the head, inſtead of preſenting by its top, as is requiſite in order to the due ſucceſs, preſents itſelf always in an oppoſite manner: which fruſtrates the operation. It is true, ſome have propoſed to turn the head; but they who have done ſo, do not recollect, that it is very difficult, not to ſay impoſſible, to turn a head; the whole ſurface of which is glutinous, and does not afford any hold.

The obſervations that have been made on all the means propoſed for the extraction of a head remaining in the *uterus*, will deter, without doubt,

doubt, the midwives from undertaking ſuch an operation: and I applaud their prudence. But I thought fit, nevertheleſs, to explain to them, at leaſt, ſummarily, theſe ſeveral methods; that I might not leave them ignorant of any thing which belongs to the art they profeſs. I muſt, for the ſame reaſon, inform them, that all theſe difficulties are at preſent removed, by the invention of *Mr. Levret*'s crooked *forceps*: by means of which, the head remaining in the *uterus*, may be extracted eaſily, and without danger. They may ſee what has been ſaid on theſe *forceps*, in *the ſummary hiſtory of the art of midwifery. Article* II. *No.* 4.

CASE III.

Of the difficulty in the extracting a mole.

I HAVE explained, *in the treatiſe on the diſeaſes of women, book* III. *chap.* 17, the nature and production of moles: and it is needleſs to repeat here what I have ſaid before. This theory is, moreover, very little requiſite for midwives; and if any ſhould be curious to be informed of it, they may have recourſe to that book. I ſhall therefore confine myſelf here, to the remarking, that moles may be diſtinguiſhed to be of three kinds:

1ſt. The *firſt* kind is an after birth ſomewhat diſfigured, where the *placenta* has acquired a conſiderable magnitude, and the *fœtus* has periſhed early. When the *placenta* remains attached to the *uterus*, after the death of the *fœtus*, and receives nouriſhment, it acquires a great volume; and this is *the mole, properly ſpeaking*, which

which will make the principle ſubject in this article. But it ſometimes happens, that towards the ſecond or third month of pregnancy, when the *fœtus* periſhes, the *placenta* is ſeparated; remains in the *uterus* without growing; and forms there a little mole of the firſt kind: of the ſame nature as the preceding, but leſs known; or, more properly, leſs remarked.

II. The mole of the *ſecond* kind, is formed by a maſs of hydatids; that is to ſay, ſmall tranſparent bladders, fixed each, by a pedicle to a ſpongy body, of an oval or ſpherical form, full of a clear lymph, colourleſs, or a little yellowiſh; of which the ſize varies from that of a pea, to that of a pigeon's egg. This kind of mole had been a long time overlooked: but it is at preſent known from unqueſtionable obſervations: and it is called the *hydatidic mole*.

III. The moles of the *third* kind, hardly merit the name. They are only pieces of the *placenta*, remaining in the *uterus*, after ſome preceding delivery; which are preſerved there without putrefying, or growing; and by the compreſſion of the *uterus*, have been made round and compact; but in which no cavity is found, as in thoſe of the firſt kind; to which it is eſſential.

If it be uſeleſs to midwives to know the cauſes of the formation of moles, it is very uſeful to them to know the ſigns, which evince their exiſtence in the *uterus*; and which may ſerve for diſtinguiſhing them from other diſeaſes, that reſemble them.

I. The great mole of the firſt kind, of which the knowledge of the diagnoſtic is moſt important, has four ſigns, which are peculiar to it: to be accompanied, when it is formed, with all the

the circumſtances that attend the beginning of pregnancy; as the heart-burn, an inclination to vomit, and bad appetite for ſtrange things, *&c.* without perceiving ever any motion; to grow faſt, and attain at the end of nine months, a magnitude larger than that of a child: and to form a ſpherical tumour, that has ſome reſiſtance, without being hard. Hence this mole may be diſtinguiſhed from other ſwellings, with which it may have ſome likeneſs.

1ſt. From pregnancy: becauſe in that ſtate, the motion of the child is perceived, after the fourth month; which is wanting in the caſe of moles. In pregnancy, however, the ſwelling of the belly is long; whereas it is round, when from a mole.

2dly. From a dropſy of the *abdomen:* becauſe, in the beginning of a dropſy, there are no ſigns of pregnancy; whereas ſuch do attend the beginning of a mole: and in the latter, no fluctuation of the water, or counter-ſtroke, is felt, compreſſing, or ſtriking, the two ſides of the belly, as in a dropſy.

3dly. From a *ſchirrus:* becauſe there is not found, when a *ſchirrus* is forming, the inconveniences of pregnancy, as in the caſe of a mole: and that in the *ſchirrus*, the tumour is hard and uneven; whereas it is ſoft and equal in the mole.

4thly. From a *ſteatoma*, or a *polypus* of the *uterus:* becauſe the *ſteatoma* is not preceded, as the mole, by the inconveniences of pregnancy; and that it is formed much more ſlowly than a mole.

II. As to the mole of the *ſecond* kind, or the hydatidic mole, it is very rare; which makes it leſs attended to. It begins with the ſame inconveniences

veniences as accompany the beginning of pregnancy: which are, indeed, the proper criterion of a mole. Inſtead of forming a ſpherical tumour, it forms a flat and ſoft one, which diſtinguiſhes it from the mole properly called ſo. As it adheres to the *uterus*, by a ſmall baſe, it is eaſily ſeparated by its own weight, about the eighth or ninth month: and bearing upon the orifice of the *uterus*, it irritates its own expulſion, by the ſame mechaniſm, as a child: and procures itſelf an eaſy delivery: becauſe the *veſiculæ*, which form it, readily adapt themſelves to the opening, which the orifice affords it.

III. With regard to the little mole of the firſt kind, and the falſe mole of the third; they are ſo ſmall, that the women do not perceive them, and conſequently they do not require much conſideration. They come away of themſelves, when women are again delivered: when any conſiderable flooding, or an obſtinate and copious *fluor albus* happens; or when they make any great ſtraining.

It is, therefore, only the large mole of the firſt kind, or, to ſpeak more accurately, the mole properly ſo called, which merits attention. The other moles, of which we have ſpoken, have either never been connected with the *uterus*; or, if they have been ſo, have ſeparated of themſelves early: whereas the large mole, very rarely ſeparates; and remains connected with the *uterus*, not only during nine months, as a *fœtus*, but a longer time yet, according to ſeveral obſervations.

As this mole always grows as long as it adheres to the *uterus*, and may become of a monſtrous ſize, endeavour ſhould be made to extract it, as ſoon as there is a certainty of its exiſtence,

ence, which cannot be till about the fourth or fifth month of pregnancy. To effect the extraction, there are two operations to be performed; both of them very difficult and dangerous: which ought to be a motive for not concealing from the relations, the prognoſtic which the caſe offers.

The firſt operation is to make a ſeparation of the mole from the *uterus*; which is difficult. For, in the mole, as the *placenta* has grown very much, and is much bigger than that of a *fœtus*, even at the full time; it has a much ſtronger adheſion, than the *placenta*, in a common delivery.

The *ſecond* is, to procure the coming forth of the mole: for which the *uterus* is in no manner diſpoſed; and to which, it is not irritated by the mole, as it has no motion. With regard to this it may be proper to ſee what has been ſaid in the preceding caſe, of the difficulty which there is to extract the head of a child when it remains in the *uterus*.

It has been propoſed, in order to facilitate the firſt operation; 1ſt. To relax and mollify the *uterus*, by the uſe of warm baths; mineral purgative waters; emollient injections, or fumigations; the vapour which riſes from a decoction of mallows, marſh mallows, branch urſine, mullein, *&c.* received in a perforated chair. 2dly. To employ, afterwards, emmenagognes; which, by exciting the *menſes*, ſeparate the mole; and for that purpoſe, are uſed ſuch martial and mercurial medicines, as are not purgative, given in ſtrong doſes. 3dly. To aſſiſt the operation of theſe remedies, by making the patient ſneeze, vomit, purge ſtrongly, go in rough roads in a jolting carriage;

carriage; and jump down the ſteps of a flight of ſtairs, two by two.

Theſe means ſucceed ſometimes, though but rarely. For which reaſon, inſtead of depending on them, it is proper, as ſoon as their inefficacy is perceived, to have recourſe to the forcible delivery, ſuch as has been propoſed for a conſtant flooding, which comes on in a pregnant woman: concerning which, ſee *chapter* IV. of this book, *caſe* 1. *article* 2.

After having placed the woman in a proper poſture, and directed ſome perſon to hold her hands, the hand, well greaſed, muſt be put into the *vagina*; and one of the fingers, it may be the middle finger, muſt be endeavoured to be introduced into the orifice of the *uterus*; and moved in different directions, to inlarge the opening into the *uterus*. A fore finger muſt be then introduced, likewiſe; and, by opening ſeveral ways the two fingers, the dilatation of the orifice may be augmented, ſo as to introduce, ſucceſſively, the four fingers, and the thumb, cloſed together at the ends.

Theſe four fingers and thumb, thus introduced, make a kind of a wedge; and, by moving them aſunder, they become a *dilator*. By theſe means, it is effected to open the orifice of the *uterus* ſufficiently, to introduce the hand.

The place of adheſion of the mole is then to be ſought for: which is towards the *fundus* of the *uterus*. When it is found and diſtinguiſhed, a finger muſt be put upon the mole, and another upon the *uterus*, and, by moving them aſunder, it muſt be endeavoured to looſen the mole. As ſoon as it is found this attempt ſucceeds, the two fingers are to be moved forwards;

wards: and, by proceeding to act in the same manner, the separation is gradually made; and the whole mole at length set loose. Dispatch must be made, towards the end; because, in proportion as the *placenta* is separated, the flooding, that is occasioned, becomes very violent.

The mole, when detached, falls on the orifice of the *uterus*: and, to retain it there, it is not only proper to raise the body of the woman; but it is necessary, to order, also, some careful person to press gently on her belly, to hinder it from rising again, into the *fundus* of the *uterus*: and it should be attempted without delay, to perform the extraction. The common methods should not be adopted for this purpose: as such a trial would be very difficult and painful; and the success almost always impossible; but it must be attempted by crotchets, or some of the *forceps*, that have been invented for such purposes. But the danger of crotchets has already been set forth; and the bad consequences that may result from them. The use of *forceps* is more safe: but little assistance can be derived from them, when the mole is of a certain magnitude. In such cases, therefore, it is better to resolve to tear it; and extract it by pieces.

In consequence of this, the fingers should be endeavoured to be thrust into the substance of the mole as far as they can, in order to tear off great pieces; and to perform thus, by degrees, the intire extraction of it. But if the substance of the mole be too firm to admit of the fingers being thrust into it, a crooked knife should then be had; or, what is better, a bistory, inclosed in a sheath, from whence it may be made to come out, by turning a button. In or-

der to uſe thoſe inſtruments, the left hand greaſed, muſt be introduced up to the mole; and the inſtrument muſt be ſlipped up along this hand, by the other hand; and, when the biſtory is put into a condition to act, if it be a biſtory which is uſed, deep inciſions ſhould be made in the mole, by directing the inſtrument with the left hand. As ſoon as the mole is cut, and the inſtrument is caſed and drawn out, the hand muſt be thruſt into the inciſions: and the mole muſt be torn; which is then eaſily performed: and it muſt be drawn away by pieces. When this is done, the hand ſhould be moved gently about the *uterus*, to take away all the clots of blood, or ſmall parts of the mole, which may be there.

Some cordial, which is not of a heating nature, may be given during the operation; and again repeated after it is finiſhed. The patient ſhould be put to bed, and, two or three hours after, ſome weak broth, may be given to her: and, if her pulſe riſe, ſhe ſhould be bled three or four times in the arm: which may be repeated, according to the degree of the fever, and of the danger of inflammation.

I hope, from what I have ſaid above, reſpecting this matter, the midwives will not have any inclination to undertake ſo difficult and dangerous an operation. It is true, the uſe of the crooked *forceps* of Mr. *Levret*, has rendered it much more eaſy: as, by that means, moles may be extracted without cutting them: at leaſt, if they be not very large.

BOOK V.

Of the bad accidents, which ſometimes happen in deliveries.

CHAP. I.

Of the falling down, or deſcenſus *of the* uterus.

I DO not propoſe to treat here, in particular, of the cauſes, ſymptoms, and cure, of the *falling down* or *deſcenſus* of the *uterus*. I have ſpoken amply enough of it, in the *treatiſe on the diſeaſes of women*: which may be conſulted. I ſhall content myſelf at preſent, with giving a ſummary idea of the nature, and cauſes of the *deſcenſus* of the *uterus*; in order to make better underſtood, what I muſt ſay of this accident, which ſometimes happens in delivery, and the means of diſtinguiſhing it; and applying a quick remedy to it.

The ſnout, or the point of the neck of the *uterus*, projects into the *vagina* half an inch at leaſt: and the *vagina*, conjoined to the *uterus*, ſurrounds this point nearly, in the natural ſtate; and is narrow and firm enough not to ſuffer the *uterus* to come further into it then. As long as things remain in this condition, the *uterus* is kept in its place. But it comes forward into the *vagina*, or, if that expreſſion be better, *deſcends* into it, when the part of the *vagina* to which it is fixed, is much dilated,

or eaſily *dilatable*; and the *uterus* is puſhed thither forcibly enough, to overcome the reſiſtance which the *vagina* may oppoſe to it.

When, 1ſt. the *vagina* is too much dilated, by its natural conformation, or by ſome delivery of a very large or monſtrous child that has preceded.

2dly. The *vagina* is too eaſily dilatable: either on account of its being naturally ſoft, and provided with but few muſcular fibres; or, on account of its being relaxed and mollified, by a conſtant diſcharge of the *fluor albus*, particularly ſuch as is *ſerous*.

3dly. The *uterus* is too forcibly puſhed againſt the *vagina*, by any efforts, vomiting, ſtraining, ſneezing, or violent fits of coughing.

By the concurrence of theſe cauſes, it ſometimes happens, that the whole body of the *uterus*, filled with the *fœtus* which it contains, projects into the *vagina*, with the point of the orifice firſt: that is to ſay; the *uterus* falls or deſcends into the *vagina*. Sometimes it deſcends only to the middle of the *vagina*; and then the *deſcenſus* is only *incomplete*: but at other times it gets through the orifice of the *vagina*, and falls into the *vulva*: and it is then a *complete deſcenſus*.

Every midwife muſt be able to diſtinguiſh this ſtate: becauſe they muſt all know the neck of the *uterus*, and particularly the ſnout, or *os tincæ*, remarkable for its form, and the tranſverſe opening in it. The ſlighteſt attention muſt, therefore, be ſufficient, to make them comprehend, that the body, which projects into the *vagina*, is the *uterus* itſelf, and not the child.

The

The *deſcenſus* of the *uterus*, in labour, is always dangerous, both to the mother and the child: and, in proportion as it is greater. It is more *dangerous to the mother*; becauſe ſhe ſuffers from the dragging of the diſplaced *uterus*: becauſe ſhe cannot be delivered on account, that the compreſſion, which the *uterus* undergoes, does not ſuffer it to contract itſelf: and becauſe, in this condition, the *uterus* is ſubject to be enflamed, or mortify. It is *dangerous to the child*: becauſe, in that ſtate of compreſſion, the delivery of it cannot be effected; and there is reaſon to fear it will die, from the poſture in which it then is: as very often happens.

It is proper, therefore, that the midwife haſten to remedy quickly this accident: which becomes worſe in proportion, as the *uterus* falls lower.

In order to this, the woman muſt be laid on her back, with her body lower than her buttocks: and, after having well greaſed the right hand, it muſt be introduced into the *vagina*, and uſed there to thruſt back the *uterus* into its proper place: which muſt be done, however, without violence.

If the efforts be ſufficiently great, to give room to hope, that the *uterus* will open of itſelf, the event ſhould be waited for; aiding, nevertheleſs, the dilatation of the orifice. But, if the efforts be weak and few, the orifice of the *uterus* ſhould be dilated, by introducing the fingers, one after another, in the manner that has been mentioned ſeveral times before.

When the orifice is opened ſufficiently, the hand ſhould be introduced into the *uterus*: the coverings ſhould be torn, to diſcharge the waters;

ters: the poſition of the child ſhould be examined: and, if it preſent itſelf by the head, in a proper poſture, the delivery ſhould be performed in that ſituation.

In every other ſituation, and even in that we have mentioned, if the delivery languiſh by the weakneſs of the mother and child, the child ſhould be turned in the manner, which has been already ſeveral times explained; and delivered by the feet. This is eaſily performed, and ſuch a delivery does not require ſo much aid, either from the mother or the child. But whatever method is purſued, it is neceſſary, during the whole time of performing the delivery, to keep the left hand in the *vagina*, in order to ſtop the edge of the orifice, and hinder it from following the child, and drawing the *uterus* with it, till the child is in the paſſage; at which time it muſt be taken away, for fear of impeding the child's coming out.

After the coming forth of the child, the extraction of the after-birth ſhould be made in the uſual manner. The delivered woman ſhould be then put to bed, with her buttocks higher than her belly; and her thighs cloſe: without the uſe of any further remedy at that time. But when ſhe is up again, it ſhould be attempted to cure the *deſcenſus*; or, at leaſt, to prevent the conſequences of it, by the remedies, which may be found in the *treatiſe on the diſeaſes of women*: eſpecially, by the uſe of an uterine girdle, well made, if there be occaſion for it.

CHAP.

CHAP. II.

Of the reverſing, or inverſion of the uterus.

THE reverſing or inverſion of the *uterus*, of which we are going to ſpeak in this chapter, ſhould not be confounded with the falling down, or *deſcenſus* of it: of which, we have already ſpoken in the preceding chapter. In the *deſcenſus*, it is the body itſelf of the *uterus* that falls into the *vagina*; preſerving moreover its natural form: whereas, in the inverſion of the *uterus*, the *fundus* of it is reverſed; and comes through the orifice, by preſenting its interior ſurface outwards; and forms, in the *vagina*, a tumour, at firſt as big as an egg, or an apple: but which, when left to itſelf, will afterwards equal ſometimes the head of a child.

The inverſion of the *uterus* never happens, but in labour: becauſe it can never happen, but when the orifice of the *uterus* is open: which is only at that time. It proceeds, ſometimes from the imprudence of the midwife; who, by pulling too ſtrongly the *placenta*, while adhering to the *fundus* of the *uterus*, brings down the *fundus*; and conſequently turns it outwards.

It alſo ſometimes proceeds from convulſive agitations of the *uterus*, after a hard labour; which puſhes the *fundus* through the orifice yet open: nearly in the ſame manner as the contractions entangle the inteſtines, in violent colics; and puſh one part of them into another; ſometimes the ſuperior part into the inferior, and ſometimes the inferior part into the ſuperior: which gives riſe to the iliac paſſion.

From whatever cauſe the inverſion of the *uterus* comes, it is always a very dangerous accident. As the veſſels of the *uterus* are then very large; and the quantity of blood carried thither very copious; the part of the *uterus* which is come out ſwells viſibly, in proportion as the orifice, that compreſſes it towards its baſe, hinders the return of the blood which abounds there. This portion of the *uterus* not only tumefies ſuddenly; but it grows hard; becauſe the cold coagulates there the blood: and what is ſtill worſe it ſoon mortifies, if it be not remedied.

When this accident happens, the midwives are generally much embarraſſed with it. The greateſt part have no idea of ſuch an inverſion: and, when it comes, they know not what judgment to form of it. Some believe it to be the *placenta:* or, when that is already come forth, they imagine it to be a mole: and, in conſequence of ſuch notion, do every thing poſſible to draw out the body, that appears: which encreaſes the diſorder, and danger. But it is eaſy to inform them how to judge better. Whenever there comes out from the orifice of the *uterus*, a ſpherical body, of which the ſurface is uneven, and ſpread over with little holes, whence the blood trickles out; of which the ſubſtance is ſoft and ſpongy; and, in which, no opening is perceived, that may ſhow it to be the body itſelf of the *uterus*; there is a certainty that ſuch body is the *fundus* of the *uterus* reverſed; eſpecially, if this happen in a labour, where the *uterus* is much agitated by convulſive contractions; or the midwife has any reaſon to reproach herſelf, with having pulled too ſtrongly the *placenta*,

centa, while it adhered to the *fundus* of the *uterus*.

But when any doubt remains, the moſt ſafe method, and that which ought to be followed, is to puſh back the projecting body, as ſoon as it appears, into the *uterus*: which is not attended with any hazard. If it be the reverſed *uterus*, the life of the woman in labour is ſaved by it: if it be the *placenta*, there will be time enough to extract it, after a certainty is obtained of its being ſo; or if, by chance, it ſhould be a mole, there will be alſo time enough to take the proper methods for delivering the woman in labour of it.

In order to return the reverſed *uterus* into its place, the body of the woman ſhould be lowered, and her buttocks raiſed: after which, having well greaſed the right hand, it ſhould be introduced into the *vagina* up to the protuberant part, which ſhould be gently thruſt back into the *uterus*: beginning with the ſides, as it is uſual to do in the reduction of ruptures. This part muſt then be guided with the fingers to the place, where the *fundus* of the *uterus* ought to be; and, in drawing back the hand, it will be perceived if there be any portion of the *placenta*, or any monſtrous *fœtus*, as might be imagined; and if there be, the caſe may be treated, according to the methods already directed. But theſe caſes are ſo rare, that they do not merit any particular conſideration.

Every thing being thus re-adjuſted, if the *uterus* continue to be agitated with convulſive motions, which may again throw it down into the orifice, it is proper to keep the hand at the entrance of the orifice to prevent the danger, till

till the orifice be closed, or the convulsive contractions cease. By this means, the disorder is cured; and the delivered woman perceives no more of it, when she is recovered from her lying in, except a *descensus* of the *uterus*, with which she will remain incommoded; and, for which, in default of a perfect cure, the patient is often obliged to be content with a palliative one.

CHAP. III.

Of the convulsive motions of the uterus *in delivery.*

THE convulsive motions of the *uterus*, which happen in delivery, are always a very bad, and often a fatal accident.

These motions are of different kinds. First, sometimes they are a trembling or shivering of the *uterus:* of which the tremors are so lively and quick, that the hand of the midwife, which is opposed to them, is entirely benumbed; as if she had touched a *torpedo:* and the effect is produced by the same mechanism.

2dly. At other times, these motions affect in a great degree, the whole body of the *uterus*; contracting it from right to left, from above to below, or in all these directions at the same time. But these motions are not continual; and generally have some intervals of remission.

3dly. Sometimes the convulsive motions of the *uterus* communicate themselves to the diaphragm, and other parts: which causes the whole body to be agitated; and the disorder resembles an epileptic fit; and the more, as the patients

patients loſe their ſenſes and perception; and have their mouths full of froth, and, in ſome caſes, even of ſuch as is bloody.

4thly. Laſtly, there is ſometimes joined to theſe convulſive motions, when they are univerſal, a profound ſwooning; ſuch as that which is known under the name of *Carus*, or *Cataphora*: and this happens, when theſe motions take the character of an epileptic fit. But ſometimes this ſwooning is without convulſions; and the patient appears to be attacked with an apoplexy.

The convulſive motions of the *uterus*, deſcribed in the two preceding articles, ariſe from the combined effects of two cauſes: from the ſtrong irritations, which the child makes on the *uterus*, when it is conſtrained, preſſed, or ill; and from the too great ſenſibility of the inſide of the *uterus*, on which theſe irritations produce greater effects, than they would if the *uterus* had a leſs acute feeling. Hence theſe convulſive motions generally happen only to young perſons, who are very tender; to hyſterical, or epileptic women; or to ſuch as are timid; eſpecially when the labour is long, and hard; and the child, being ſtrong and vigorous, powerfully agitates the *uterus*.

As, in the accident mentioned in the third article, there are two diſeaſes complicated, it is eaſy to judge, that it muſt proceed from two cauſes: from the irritation which a child makes on an *uterus*, that is too ſenſible; which produces the convulſive motions, as we have before explained: and from the ſurcharge, which happens in the blood veſſels of the brain; and which, by compreſſing it, produce the *cataric* ſwooning.

But

But this ſurcharge of the blood veſſels of the brain is cauſed by the convulſive contractions of the *uterus*, and other *viſcera* of the *abdomen*; which, by compreſſing the trunk of the *aorta deſcendens*, force the blood too copiouſly unto the ſuperior branches of the *aorta*; and thus give riſe to the ſurcharge of the veſſels of the brain.

As to the apoplectic ſwooning, which has been ſpoken of in the fourth article, it comes alſo, as it is eaſy to judge, from a ſurcharge of the veſſels of the brain: but from a greater than that, which cauſed only a *catoric* ſwooning. This accident, therefore, happens only to plethoric women; who have neglected to be let blood in the courſe of their pregnancy; and who undergo a long and painful labour, which keeps, in a ſtate of contraction, all the parts of the *abdomen*; and which, by compreſſing the *aorta aſcendens*, makes almoſt all the blood regurgitate to the head. As ſoon as this ſwooning takes place, all the convulſive motions ceaſe: becauſe the few animal ſpirits, which are then ſecreted in the brain, are not ſufficient to ſupport them.

The four caſes, of which we have here ſpoken, are very momentous: and, as we have already ſaid, are ſometimes fatal.

I. In the firſt, the child benumbed by the ſhivering of the mother, in the ſame manner as the hand of the midwife, when ſhe introduces it into the *uterus*, is not in a condition to exert the motions neceſſary for aſſiſting delivery; and the *uterus* itſelf, in this ſtate, is not capable of contracting itſelf, as it ought. Thus the delivery does not go forwards: while the child, nevertheleſs, expoſed to the continual ſhakings, preſently dies.

II. It

II. It is nearly the ſame in the ſecond caſe. The child, forcibly preſſed by the contractions of the *uterus*, cannot aſſiſt the delivery; and the *uterus* ſtill leſs: becauſe the contractions, with which it is agitated, prevent thoſe requiſite to the delivery. Every thing therefore is ſtopt: and nevertheleſs the child dies ſoon; in conſequence of being violently bruiſed, by the contractions of the *uterus*.

III. and IV. In the two laſt caſes, as the head is affected, and this affection of it goes on increaſing, the danger of the life of the mother is very great; and, conſequently, that of the child; ſuppoſing it have reſiſted, till then, the ſhakings to which it has been expoſed.

As this accident is very preſſing, and dangerous, the midwife ought not to take the charge of it alone: and ſhe would do well to call in a phyſician. However, in the mean time, ſhe ſhould not delay, as ſoon as the convulſions appear, to order the woman to be bled in the arm, if the head be free: or in the foot, if there be reaſon to fear that the head is affected. This is the moſt efficacious aſſiſtance, that can be employed: and the phyſician ſhould not fail to repeat the bleeding, almoſt immediately, three or four times, if the ſtate of the pulſe will admit of it. At the ſame time, emollient fomentations ſhould be made on the *abdomen*; and clyſters, ſlightly purgative, and even purely anodyne, ſhould be given. It has been even propoſed, to put the lying in woman into a warm bath, to relax effectually the fibres and membranes of the *uterus*. Some phyſicians have adviſed to give emetics in this caſe. But this notion has not been well received: becauſe there is reaſon to fear, that the

ſtrong

ſtrong contractions of the diaphragm, and muſcles of the *abdomen*, which the vomiting excites, by cloſing the *uterus* and compreſſing the child, may kill it.

The only effectual ſuccour, that can be employed in this deplorable ſituation, is to haſten the delivery: becauſe it is certain, that as ſoon as the child has been drawn out, the convulſions of the *uterus* ceaſe; or diminiſh ſo much, as to take away all ground of fear from the mother: eſpecially, if the *lochia* flow copiouſly. But this delivery can only be attempted in the intervals, which the convulſive motions leave in the two firſt caſes. For which reaſon, it is proper to try aſſiduouſly to take advantage of theſe intervals. If the *uterus* be already ſufficiently opened to introduce the greaſed hand, it is a great advance. But if it be not ſo, the orifice muſt be dilated, by introducing the fingers ſucceſſively, as has been explained ſeveral times before: by which means, the hand may afterwards obtain a paſſage into the *uterus*. The coverings of the child muſt then be torn, if they be not ſo already: and whatever ſituation the child may have, it ſhould be turned by the feet, with the precautions above recommended; and delivered in that manner: becauſe that kind of delivery is the ſhorteſt, and admits of the beſt aſſiſtance.

If the after-birth follow the child, the midwife ſhould give the whole to the nurſe, who ſhould hold it near the fire, till the midwife have put the delivered woman in bed; and given her one or two ſpoonfuls of *Alicant* wine. After which, ſhe muſt cut the cord; and cleanſe, and ſwaddle the child; after having chriſtened it, if its life be in danger.

But

But if the after-birth do not come out with the child, the midwife ſhould make a double ligature on the cord; cut it betwixt them; give the child to the nurſe; and apply herſelf to complete the delivery. After which, having put the woman in bed, ſhe muſt examine the ſtate of the child, and have it chriſtened, if ſhe judge it neceſſary.

CHAP. VI.

Of the rupture of the uterus.

THE rupture of the *uterus* is one of the moſt fatal accidents, that can happen in deliveries: ſince it deſtroys both the mother and child at the ſame time. There are, however, ſome inſtances of women, who have ſurvived it: as the woman of *Tholouſe*, who bore her child in the *abdomen* for twenty five years; into which it had gained a paſſage in a hard labour, by tearing the *uterus*; as appeared, on opening the woman after ſhe was dead.

This miſchief happens, when the child is placed obliquely in the *uterus*; or, which is worſe, croſs it, from one ſide to another; and, being ſtrong, moves violently, ſtretching the whole of its body, till, after ſeveral ineffectual efforts, it at length pierces or tears the *uterus*, by its head, or feet, according to the leſs reſiſtance, which any part of the ſubſtance of the *uterus* oppoſes to it. Sometimes the rupture is moderate at firſt, and only one part of the body of the child can paſs through it: but it ſoon grows bigger,

bigger, ſo that the whole paſſes aftewards; and goes into the right or left ſide of the *abdomen*.

Several ſigns preſage this event, if cloſe attention be given to them. The bad ſituation of the child; which it is eaſy to know. The violence with which it acts in the *uterus*, without any progreſs in the delivery. The ſtate of the *uterus* itſelf, when it enlarges from right to left; and ſhortens itſelf from the *fundus* to the orifice: which occaſions, that the orifice, very far from advancing into the *vagina* and dilating, riſes higher, and grows cloſer. Laſtly, the excruciating pains, which the *uterus* ſuffers; and in which it perceives the intolerable efforts of the child. In the concurrence of theſe ſymptoms; or, at leaſt, of ſome of them; it is high time to prevent the miſchief which may be foreſeen: and the only means to effect that, is to procure delivery without delay.

In order to this, the right hand, being greaſed, ſhould be put into the *vagina* up to the orifice of the *uterus*; which ſhould be dilated gradually, by the ſucceſſive introduction of the fingers, till the hand can enter it. When that is done, the hand muſt be uſed to tear the coverings, if they be not ſo already; and to bend the limbs, thighs, or trunk of the child, to diminiſh the length of it; in order to make the efforts againſt the ſurface of the *uterus* ceaſe, and to take advantage of the room that is gained by it, to endeavour to turn the child, and deliver it by the feet. But, if the after-birth do not come away with the child, the place ſhould not be left, till the extraction of it be made: and, on that account, the child ſhould be got rid of, after having made the ligature of the cord.

If

If this operation ſucceed, the mother and child are at once ſaved: but there are great obſtacles to it. On one ſide, the orifice of the *uterus* is not to be opened without much difficulty; and there would be much trouble in introducing the hand, which does not then afford great hopes of delivering the child. On the other ſide, when the hand is at laſt introduced, the child is found ſo ſtrong, and ſo ſtrictly embraced, that there would be a great deal of trouble in bending its legs, thighs, or body, to ſhorten its length, and procure a little room to turn it, without which it is impoſſible to deliver it. But if theſe difficulties deter ſo much, that the attempt be given over, the rupture of the *uterus* will ſoon follow; and it will be preſently ſucceeded, by the death of the mother and child: which ſeldom ever ſurvive it.

A German phyſician, who has written a very good diſſertation on this ſubject, propoſes the Cæſarean operation, as a remedy for this unhappy accident, when it happens: and he is in the right. It is certain, the child would be ſaved; and there is juſt ground to believe, the mother might alſo. For after all, a laceration or tear of the *uterus* is not incurable; or, at leaſt, not always. But to render ſuch an operation ſucceſsful, it ſhould be performed the moment after the rupture has been made. For the mother and the child die ſoon after: and how is this operation to be performed on a woman, who has juſt undergone the moſt violent hurt; who is at that time generally in an alarming ſwoon; and who is ſo weak, that her pulſe can ſcarcely be at all felt? In theſe circumſtances, ſome interval of eaſe muſt be given to the patient. It

ſhould be endeavoured to recover her ſpirits by ſome ſpoonfuls of *Alicant* wine, or ſome gentle cordial: and the opportunity ſhould be taken, of ſome favourable moment, not to perform the Cæſarean operation; for there is no inciſion to be made into the *uterus*; but to make a ſimple inciſion into the cavity of the *abdomen*; which is much leſs dangerous; and may ſuffice to ſave the lives of both the mother and child.

CHAP. V.

Of the rupture of the perinæum, *or* ſeptum, *which ſeparates the* vulva *from the* anus.

THIS *perinæum*, or *ſeptum*, is only formed of the coats of the *vulva* and *anus*, joined to each other: or, at leaſt, incloſes nothing betwixt them, but ſome cellural membrane. It is not ſurpriſing, therefore, that this part is ſometimes torn, in delivery; and the two openings made one; which, in ſome caſes, proves to be a very bad accident.

This miſchief happens, 1ſt, When the child is very large: 2dly, When the *uterus* is inclined forwards; which makes the head of the child puſh againſt the hinder part, and conſequently on that. 3dly, When the midwife, in introducing her hand into the *vagina*, preſſes too much on that part: or when the *accoucheur* in the uſing crotchets, which is neceſſary in this caſe, forces too much on it. It muſt be allowed, that the *forceps*, when made of a ſtraight form, had ſometimes the ſame inconveniences, but this is happily

happily remedied at preſent, by making them crooked.

Young women are particularly expoſed to this accident, when they have the lips of the *vulva* denſe, firm, compact, and ill diſpoſed to elongate and ſtretch; which occaſions all the violence of the diſtenſion to fall on the *perinæum*, at leaſt, unleſs the midwife take great care to prevent it. This care is confined to the endeavouring to redreſs the head of the child, when preſented obliquely; to the greaſing well the edge of the *vulva*; to the ſoftening, and rendering it diſtenſible; and to the introducing one finger into the *anus*, to puſh back the *coccya*, and ſupport the preſſure of the child on the *perinæum*, to prevent its being torn.

It is eaſy to judge what are the inconveniences of an accident of this kind: which expoſes the *vulva* to be always fouled, by the excrement, particularly when the laceration is large; and cannot fail to make the women very diſagreeable to their huſbands. There is only one method of remedying it; to wit, the reuniting ſoon the edges of the lacerated parts: which is eaſily done, when they are not large, and one ſtitch is ſufficient: as in that caſe it may be made with a needle, moderately crooked. But it is much more difficult, when, in a longer laceration, it is neceſſary to make a ſecond or third ſtitch; which cannot be done without great trouble, and by making uſe of a needle almoſt circular.

Before the *future* is made, the wound ſhould be waſhed with warm wine: and if it be not recent, the edges ſhould be taken off by a pair of ſciſſars: as is practiſed in the operation on an old hare-lip. The *futures* being performed, there ſhould

be introduced into the fundament, a great tent of rolled linnen, ſpread with ſome ointment as the digeſtive, ungent *de la mere*; or liniment of *Arcæus*: and the wound ſhould be dreſſed on the ſide of the *vagina*, with pledgets ſpread with the ſame ointments; that is to ſay, the digeſtive, ungent *de la mere*, or liniment of *arcæus*, according to the progreſs of the cure: covering the whole with a cere cloth of taffety: or a piece of linen ſpread with wax, to hinder the urine from getting to it.

The patient muſt be confined to her bed, till ſhe be cured: towards which, a great advance will be made about the twelfth day. During that time, ſhe ſhould be kept to ſpoon meats, to hinder too much excrement from being formed, and particularly ſuch as is hard. That which does come, ſhould be ſoftened by emollient glyſters: and care ſhould be taken, to waſh the part every time the patient goes to ſtool: as is cuſtomary in the operation for the *fiſtula in ano*.

The patient ſhould be admoniſhed, when ſhe is cured, not to become pregnant again: or if ſhe ſhould become ſo, it is proper ſhe be put into the hands of a ſkilful and prudent midwife, who muſt not neglect to greaſe this part well in the delivery: and to guard, as much as ſhe can, againſt a too great diſtenſion, that the laceration may not be renewed.

CHAP.

CHAP. VI.

Of the Cæſarean *operation.*

IN this operation, an inciſion is firſt made on the integuments of the *abdomen*, in a pregnant woman; and immediately after, another on the membranes of the *uterus* itſelf, in order to take out the child, which is contained in it. It is practiſed in three very different caſes. 1ſt, On a woman dead, near the end of her pregnancy, of a fall; blow; apoplexy; poiſon; ſtab, or, in a word, of any thing that has cauſed her death in ſo ſudden a manner, as to afford reaſon to hope the child may not be dead; but may be ſaved by opening the mother; or, at leaſt, to be baptized. 2dly, On a living woman, when it is demonſtrable, that the child which is dead in her womb, cannot be extracted by any other means: which renders this operation, even cruel as it ſeems, abſolutely neceſſary to the ſaving the mother. 3dly, On a woman who has borne her child to the full time: but cannot be delivered by the common methods. In which caſe it is abſolutely right, to reſolve on this operation; that may ſave the mother or the child, and even both, when it is taken in hand in due time.

I do not imagine that midwives have ever boldneſs enough, to undertake ſuch operations: but I am of opinion, however, it may not be amiſs to ſhow them, how it is to be done; and to inform them of both, what is thought of it, and what they themſelves ought to think of it. I ſhall, therefore, in this view, divide the preſent

chapter into two articles. In the one, I ſhall ſhew the manner of performing this operation: and in the other, the judgement that ought to be formed of it.

ARTICLE I.

Of the manner of performing the Cæſarean *operation.*

THE Cæſarean operation, which is made upon a dead woman, according to the firſt caſe, has nothing difficult or alarming in it. In order to the performing it, the directions may be followed which I am going to give below, for the operation on a living woman; at leaſt, when it is neceſſary to cut the *uterus*, while the child, which is to be extracted, is yet alive. For, as to the inciſion into the *abdomen*, there is, in this caſe, no reaſon for any ſollicitude about the manner. On this account, my ſpeaking firſt of this operation, as it is to be practiſed on a dead woman, is only, becauſe it is much more ancient than the other; and gave the previous idea of the manner of performing that. The operation, however, ought never to be performed in this view; but when there is a moral certainty of the death of the woman; as will be obſerved below in the following article.

II. As to the operation, when it is neceſſary to be performed on a living woman, according to the two laſt caſes. It is one of the greateſt and moſt dangerous, the art of chirurgery admits of; and ſhould never be reſolved on, but when it is evident, there is no other way to ſave the

the life of the mother and child; or, at leaſt, of one of them.

Before it be undertaken: 1ſt, The bowels ſhould be emptied by a clyſter; and the patient ſhould make water: after which ſhe ſhould be put in a convenient ſituation for the operation, with the belly a little raiſed. The patient ſhould, alſo, be ſecured, by the aid of ſeveral perſons, who ſhould hold her hands, thighs, and even body: to ſave her the horror of ſeeing herſelf tied.

2dly, There is a diverſity of opinions with relation to the place in the *abdomen*, where the inciſion ſhould be made. Some propoſe an imaginary right line drawn from the top of the junction of the bones of the *pubes*, to the moſt elevated part of the top of the bones of the *ilium* of the ſame ſide, and to make the inciſion in the middle, and in the direction of this line. Others (*b*) adviſe *an imaginary line drawn from the anterior extremity of the top of the bones of the* ilium, *to the junction of the laſt of the true ribs with its cartilage*; *and to chuſe*, for the inciſion, *the middle betwixt this line, and the white line.* Theſe determinations differ very little from each other: and, I believe, that either of them may be followed as particular choice may direct, without any inconvenience.

3dly, At firſt a razor, round which a bandage of linen is wrapped, to render it firm and ſecure in the ſcales, may be uſed. A diſſecting knife, or a good common biſtory, may be afterwards ſubſtituted for it. Mr. Levret propoſes, (*c*) to make uſe of a crooked biſtory, that ſhould only cut by the convex part; and believes ſuch

(*b*) Mr. Levret, *ſuite d'obſervations*, pag. (*c*) *Ibid.*

an inſtrument preferable; becauſe it makes a more equal and longer inciſion: which is of great importance in the operation.

4thly, This inciſion may be made, at diſcretion, either on the right ſide or the left: but generally, the preference is given to the ſide towards which the *uterus* ſeems to incline the moſt. At firſt, the ſkin may be freely cut; and likewiſe the fat, and integuments to the *peritonæum*. But when that is laid bare, a greater circumſpection is to be uſed till a little opening be made.

5thly, To enlarge this opening, a hollow ſound is employed for directing a common biſtory: but it is more convenient, to make uſe of a finger of the left hand, either the fore finger, or the middle; by the help of which, the biſtory, that is to be muffled at its end, may be conducted. This inciſion of the *abdomen*, ought to be ſix or ſeven inches long; in order to be able to introduce the hand, without tearing any part.

6thly, As ſoon as the inciſion of the *abdomen* is made, part of the inteſtines riſe out: which muſt be properly put aſide; and committed to the care of ſome perſon to hold them. The ſtate of the *uterus*, which then preſents itſelf by its ſide, muſt be examined. It is very rare, that the *placenta* is attached to it, in thoſe parts: but if it be, care muſt be taken to avoid it; becauſe it would occaſion a great perplexity. The reſt of the operation is more eaſy: when it is diſtinguiſhed by the touch, that there is nothing in the way, but the coverings of the child.

7thly, Before the operation be undertaken, it is proper to know, whether the waters be diſcharged

charged, or no. If they be yet in the membranes of the after-birth, there will be leſs trouble in the inciſion of the *uterus*; becauſe, in this caſe, they occaſion a diſtance betwixt the body of the *uterus* and the child. But it is neceſſary, in the contrary circumſtances, to proceed with more caution in the inciſion of the *uterus*; if the waters be already gone, and the body of the child touch the *uterus*.

8thly, The inciſion into the *uterus* muſt be conducted in the ſame manner, as that into the *abdomen*: and the ſame crooked biſtory may be uſed for it. It is proper the length of this inciſion ſhould be five or ſix inches. The hand ſhould be then introduced into the *uterus*; the coverings of the child torn, if they were not ſo before; the *placenta* ſeparated with prudence, if it ſtill adhere to the *uterus*; and the hand being then paſſed under the body of the child, it ſhould be taken out with the after-birth; and given to a diſcreet perſon who may chriſten it, in caſe there be any reaſon to be apprehenſive of its not living: while the *accoucheur*, in the mean time, appropriates his attention to the care of the mother.

9thly, The blood that flows from the divided veſſels, which will not be in ſo great a quantity as may be feared, muſt be wiped up, with a ſponge; or with balls of ſoft linen. The *uterus* muſt be left to itſelf; which, by contracting in its magnitude, will ſoon replace itſelf in the baſon; and, with regard to the wound of the *abdomen*, two or three ſtitches muſt be made in it; as in all ſimilar wounds of that part. Some ſpoonfuls of a weak cordial muſt then be given to the patient; and ſhe muſt be put to bed, lying

lying on the ſide of the wound, to facilitate the paſſing out of the blood which may be diſcharged from it.

10thly, An hour after ſome ſpoon-meat may be given to the patient; and, if afterwards a fever comes on ſtrongly, ſhe ſhould be let blood in the arm: which ſhould be repeated, according to the ſymptoms that follow: confining the patient to ſpoon-meats, and ptiſan, till the cure be completed.

11thly, Some pledgets of dry lint ſhould be at firſt applied to the wound. They may be afterwards ſpread with digeſtive; and, at laſt with proper ungents or balſams. Anodyne injections firſt, and afterwards deterſive, may, if thought proper, be made into the wound of the *abdomen* betwixt the ſtitches. The ſame may be done into the *uterus*, through the *vagina*. Excepting this, the cure ſhould be left to nature, without taking any other particular care about it.

ARTICLE II.

Obſervations on theſe operations.

THE firſt of theſe operations has been practiſed, for a long time, upon women, who died at the end of their pregnancy, in order to take out, from their wombs, the children, with which they were big; and to endeavour to ſave their lives. (*d*) Pliny informs us, that three children were ſaved by this means at Rome; who afterwards became illuſtrious perſonages:

(*d*) Hiſtor. Natural *libr.* VII. *cap.* 11.

Scipio

Scipio Africanus, the elder, (P. Cornelius Scipio): the firſt of the Cæſars, ſo called, becauſe he was taken out of the womb of his mother, *à Cæſo matris utero:* and Manelius who entered into Carthage at the head of an army; *Auſpiactiùs enectâ parente gignuntur Sicut Scipio Africanus prior natus,* * *primuſque Cæſarum à cavo matris utero dictus; ſimile modo natus eſt manilius, qui Carthaginum cum excorcitu intravit.* The practice of this operation, in the ſame circumſtances, with general approbation, has never been diſcontinued, ſince that time. Originally, a ſenſe of humanity prompted the performance; becauſe it might ſave the life of a child. A ſentiment of religion is ſince ſuperadded: becauſe the child may be baptized by this means, though its life ſhould not be ſaved.

But this operation, though there be no other reaſon againſt it, muſt of courſe always affect any perſon who is to practice it. Nor ſhould it ever be undertaken, but when the mother is

* It has been believed, on a very ſlender foundation, that, by theſe words, *primuſque Cæſarem a Cæſo matris utero dicitur,* Pliny meant to ſpeak of Julius Cæſar, who became emperor; as if he came into the world, by the opening of the body of his dead mother. But who is ignorant, that Aurelia, the mother of Cæſar, lived a long time after the death of her ſon? It is known, that the father, and grandfather of Cæſar, bore the name of Cæſar, as well as he, joined to that of Julius: on which John Glandarius, the grammarian, may be conſulted in his *de familia generis Juliæ.* Moreover in the family of *Julia,* of which Cæſar was, there were two branches; of which one bore as a cognomen the name of Tullus; and the other that of Cæſar; which according to Pliny's account came from the firſt Cæſar, who gave it to this branch, from his having been taken out of his mother's womb. *A Cæſo matris utero.*

dead.

dead. How ſhocking it would be, if the parent ſhould ſhew ſigns of life, in the midſt of the operation! I am clearly of opinion, the ſlight trembling of the parts, which are cut, are not ſufficient to prove the parent to be alive. I remember having obſerved ſuch in dogs, that were thoroughly dead, whenever I have diſſected them while they were warm. But ſuch tremblings, ſhould they happen in the body of a woman under theſe circumſtances, would not fail to cauſe many lively feelings of remorſe.

What is therefore, to be done in ſuch a conjuncture? On the one hand it is proper to wait for certain proofs of the death of the mother, in order to open her. On the other it is of the utmoſt conſequence to do it as ſoon as poſſible: becauſe the danger of the death of the child augments every minute. How to determine then, when there is no infallible ſign for diſtinguiſhing whether the mother be dead or no, particularly juſt after ſhe is dead. It is ſaid that Veſalius (*e*), notwithſtanding his being ſo able an anatomiſt, was miſtaken in this point: and that inadvertently he opened a woman, whom he believed dead, whoſe heart was found to beat after ſhe was opened.

I know but one way to get out of this dilemma: and that, I practiſed once myſelf in a ſimiliar ſituation. Every thing concurred to convince me the woman was dead; but before I would conſent ſhe ſhould be opened, I had two large inciſions made in her buttocks, in

(*e*) The editor of the laſt collection of the works of Veſalius, printed in Holland, ſpeaks of it thus, on a letter of Hubert Languer.

order

order to cauſe her to move, if ſhe had been alive: as theſe could not kill her, but were capable of being cured in caſe ſhe had not been dead.

It is proper this operation ſhould be performed in the eighth or ninth month of the pregnancy, in order to the giving any ground of hopes of ſaving the life of the child; but it ſhould be performed alſo in the ſixth, for the ſake of confering baptiſm. Though it ſhould ſcarcely, ever be undertaken, but when the mother dies a ſudden death; as has been remarked in the preceding *article*. In languiſhing diſeaſes, ſuch as a ſlow fever, conſumption, or dropſy, or violent diſeaſes; ſuch as pluriſies, peripneumony, continued fevers, malignant fevers, and ſmall pox; the child generally dies before the mother. Nevertheleſs, as there is no hazard in doing it, prudence requires it ſhould be done.

In this operation, the integuments of the *abdomen* may be freely cut; the inteſtines are to be removed out of the way, and the *uterus* divided with care, to avoid wounding the child; but the inciſion is to be made large enough, nevertheleſs, to admit of taking out the child conveniently. The right hand greaſed is to be then introduced into the *uterus*; the coverings torn, if they be whole; the infant taken out; and the cord tied before it be cut. The care of ſowing up the integuments of the *abdomen*, being then left to a nurſe, the child muſt be carried to a fire; and have ſome drops of wine and ſugar given to it: and, as ſoon as it gives any ſigns of life, it ſhould be baptized.

II. But the operations, which are performed in the two other caſes, to take out of the womb of a living

a living woman, a dead, or living child, which cannot be delivered by any other means, are much leſs antient; and do not go further back than the ſixteenth century. Bauhin (*f*) relates, indeed, an inſtance of a ſow-gelder at Norigaw, in 1500, who performed an operation of this kind on his wife, by following nearly what he practiſed in ſpaying ſows; but ſuch an inſtance does not merit to have any ſtreſs laid on it: and therefore it is ſcarcely till after 1565, that theſe operations began to be practiſed by ſurgeons.

Francis Rouſſet, (*g*) doctor of phyſic, of the faculty of Montpelier, and phyſician to the king, (*h*) printed in Paris, 1581, a treatiſe on this operation, entitled, *A new treatiſe on Hyſtero Tomotoky, or Cæſarean Child Saving: being the extraction of a child, by a lateral inciſion into the belly and* uterus *of a pregnant woman, who cannot be otherwiſe delivered, without deſtroying the life of either of them, or hindering the future fertility of the mother.* This work made a conſiderable noiſe in the world, and with reaſon. It excited ſeveral ſurgeons, to follow the practice propoſed in it, in ſuch manner, that, Rouſſet, properly ſpeaking, is the introducer of the operation, at leaſt on living women, as well as of the name, which he gave it; and which

(*f*) In appendice ad *Fratatum Franciſci Rouſſet.* (*g*) Varandæus in *Tractatu de Morbis Mulierum,* libr. II. *cap. penultimo.*

Rouſſet ſays himſelf, *ſect.* 4. *cap.* 5. *Hiſt.* I. that he lodged at Montpelier, with Saporte, the profeſſor; and that Rondelet, the chancellor, preſided, when he took his doctor's degree.

(h) Du Laurens *Anatom. Liv.* VIII. *chap.* 32.

it

it has retained. For he (*i*) confeſſes, that he calls it *Cæſarean operation*: "becauſe, accord-"ing to Pliny, Scipio Africanus, the firſt of the "Roman emperors, being extracted from his "mother's belly by a ſimilar operation, bore, "on that account, the name of Cæſar:" which is a manifeſt corruption of the paſſage of Pliny: that we have quoted above: and that he meant to quote alſo, but did not underſtand.

This treatiſe contains ten ſections. In the *firſt* ſection and moſt important, after having ſpoken of the neceſſity of the Cæſarean operation, in ſeveral caſes, the author endeavours to prove, that it is not mortal; by four hiſtories, or obſervations, which had been communicated to him; and by five other caſes, he ſaid he had himſelf ſeen; which is not very much conformable to the relation that he made. In the ſecond ſection he ſtrives to ſhew, the operation may be performed with ſucceſs; and in order to that, he examines the nature of the parts, which muſt be cut, to evince they will bear it, without any fatal accident. The *third* ſection continues to treat of the ſame ſubject. In the *fourth* ſection, ſome obſervations are given, as well of children dead, and putrified in the *uterus*, which had made a paſſage gradually through the integuments of the *abdomen*; as of uteruſes extirpated without any bad conſequences; in order to infer, that there was not more reaſon for fear, in performing the Cæſarean operation. It is

(*i*) Cùm Romanorum Imperator primus Scipio videlicet Africanus, ex matris utero, hoc uti dicimus pacto ſectus, Cæſaris nomen ſortitus ſit, ad illius imitationem hunc noſtrum partum *Cæſarei* nomine inſcripſimus. *Rouſſetus, Cap.* 1.

attempted

attempted in the *fifth* ſection, to juſtify the Cæſarean operation, by the inſtance of females among other animals, which are ſpayed by taking away the *uterus*; and by, the certainty there is, of what he advances, that the accidents which may reſult from this operation are not to be feared. Laſtly, the ſixth ſection is intended to demonſtrate, that this operation does not make women barren.

As ſoon as Rouſſet's treatiſe appeared, Caſper Bauhin, a phyſician of Baſil, tranſlated it into Latin; added to it a diſſertation, in which he ſupports the opinion of Rouſſet; and printed it at Baſil, in 1582, under the title of *Exſectio fatus vive ex matre vivâ, ſine alterintrius vitæ periculo, et abſque fœcunditatis ablatione à Franciſco Rouſſeto galice tranſcripta, à Caſpare Bauhino latinè reddita, et variis hiſtoriis aucta.* Theſe hiſtories are ſix obſervations, communicated to Bauhin by two phyſicians of his acquaintance, or taken from Felix Platens.

Rouſſet's work, tranſlated by Bauhin, and the diſſertation which Bauhin has added to it, are in the collection of Gaſpur Wolphius, and Iſrael Spachius.

The praiſes which Rouſſet, and Bauhin, beſtowed on this operation, made an impreſſion on ſeveral able ſurgeons; who thought themſelves authoriſed to try it without imprudence. But it ſucceded ill under the hands of Guillemean (*a*), who performed it on two occaſions, in the preſence of Ambroſe Parè. It had the ſame event, three other times, with three other

(*a*) Mauraccau, *des Maladies des Femmes groſſes et accouchées*, livre. II. chapitre 33.

able

able ſurgeons of Saint Côme: which diſcredited it; and made Ambroſe Parè, condemn it highly: in which he has been followed by many phyſicians, and ſurgeons; and laſt by *Maunceau*.

On the other hand, this operation has been approved of by ſeveral other ſurgeons; and even by ſome phyſicians; but what is moſt ſingular, is, that father Theophilus Rainaud, a Jeſuit, undertook to defend it; and compoſed a book on this ſubject, though he was by no means equal to it. To conclude, Mr. Simon, a ſurgeon of Saint Côme, has lately maintained the ſame opinion, in a manner, in which he relates even ſixty-four new obſervations of the ſucceſs of the operation.

But it is neither by the number, nor the weight of the ſuffrages, that this queſtion ſhould be decided: or at leaſt not till after having weighed well the reaſons advanced on both ſides. This operation is condemned, as being fatal, becauſe it is neceſſary, to make an inciſion of ten or eight inches length through the integuments of the belley: becauſe it is neceſſary to make another ſimilar one, in the *uterus*; becauſe there may indeed be made ſome ſtitches for cloſing the wound in the *abdomen*; and ſome pledgets ſpread with proper unguents may be applied there; but there is a neceſſity for leaving to nature the inciſion in the *uterus*, without being even able to know the ſtate of it: and, laſtly, becauſe, notwithſtanding all the precautions, that may be taken, a part of the blood, which flows from the wounds, and of *pus* which is afterwards diſcharged, falls into the cavity of the belly; and may cauſe a mortification. Theſe are the reaſons, which determine

ſome to believe this operation to be fatal. For the exceptions, of caſes which may be brought againſt it, are ſo rare, that they do not allow them to be concluſive.

On the other ſide, theſe reaſons are oppoſed by ſuch as are contradictory to them; but founded principally on the ſucceſs, which this operation has had, as well with regard to the children, as the mother. Rouſſet did not omit, as we have ſeen, to make uſe of this argument; and he related ſome obſervations favourable to it. Bauhin collected others; and Mr. Simon has yet greatly added to them, in the memoirs we have mentioned above.

The queſtion would be decided, if theſe obſervations were as certain, and concluſive, as is pretended; and would be ſufficient to determine a judicious operator, to follow this practice without ſcruple. There is a difficulty in believing, and with great reaſon, that an operation, which has failed, when performed, by the moſt able ſurgeons of Paris, ſhould ſucceed ſo well, when practiſed by country ſurgeons, or, more properly, by country barbers; young ſurgeons, who have no knowledge in anatomy, as in the VI. hiſtory of Rouſſet, and in the II. of the *appendix* of Bauhin; by a ſurgeon, who was drunk when he performed it, as in the V. hiſtory of thoſe which Rouſſet has added in the Latin edition of his book in 1590; or, laſtly, by a ſow-gelder, as in the I. hiſtory in the *appendix* of Bauhin. Little credit is to be given to ſuch teſtimonies.

Happily, there is at leaſt one obſervation, certain and undubitable, which may put an end to all theſe diſputes: becauſe it proves not only, that

that the Cæſarean operation may ſucceed; but that it has done ſo both to the advantage of the mother and the child. We are indebted, for this obſervation, to Mr. Soumain, an able ſurgeon at Paris, who performed this operation there in 1740, with the greateſt ſucceſs, in preſence of ſeveral very intellegent ſurgeons; and ſaved, by that means, the life, both of the mother and child. It cannot be denied that this operation, dangerous as it muſt be allowed to be, may not be uſeful and ſucceſsful: which is ſufficient to warrant the practice of it in thoſe caſes, where it may be judged abſolutely neceſſary according to the maxim of Calſus, *In evidenti mortis periculo ſatius eſt anceps remedium experirri, quàm nullum.*

The only thing in queſtion, therefore, is to determine, in what caſes this operation ſhould be performed. In doing which, it is by no means proper to imitate thoſe, who have practiſed it ſo commonly: and whoſe obſervations have been cited above. They had recourſe to it, whenever the child was placed croſs or otherwiſe badly ſituated in the *uterus*; or if it was dead: altho' all the common methods were open to them, as it appears: becauſe moſt of theſe women, who eſcaped this operation, and became pregnant again, were eaſily delivered afterwards in the natural way. For when the paſſage is free, it is eaſy to extract a dead, or ill placed child: often with the hands only, when ſkill is combined with patience; or, at all adventures, it is to be done by means of the *forceps*.

The ſame conduct ſhould be purſued, where there is occaſion to deliver a monſtrous or dropſical child; becauſe there are, as we have ſeen

above, more eaſy means to accompliſh the purpoſe: and the ſame, when the child is ſtopt only by calloſities, tumours, or polypuſſes, at the neck of the *uterus*, or in the *vagina*; becauſe experience has ſhewn, that nature corrects theſe faults. In all ſuch caſes, it is proper to extirpate them by the rules of art; and, by this means, the woman is ſubjected to much leſs danger and pain, than if ſhe undergo the Cæſarean operation.

It is not even neceſſary, to purſue ſo hazardous a method, even to confer baptiſm on the child: becauſe it may, as we ſhall ſee in the following chapter, be baptized, in the mother's womb, by the way of injection,

Every thing conſidered, Mr. Levret, *accoucheur* to the dauphineſs, who has treated of the Cæſarean operation (*b*) in a very judicious manner, allows only two caſes, in which it ought to be practiſed; but I am of opinion, a third ſhould be joined to them; which Mr. Simon himſelf has added.

One of theſe caſes, which Mr. Levret admits, is (*c*) *where there is ſo faulty a conformation of the bones of the baſon in the mother, that it is phyſically demonſtrable, a child at the full time cannot poſſibly paſs through the ſtrait.* Such was the caſe of the woman, on whom Mr. Soumain performed the operation as above mentioned; in whom (*d*), *the inferior part of the ſpine, and the os pubis were ſo near each other, that there was only two inches diſtance between them.* As it is

(*b*) Suite des obſervations ſur les Cauſes et les accidents de pluſieurs accouchmens laborieux, *page* 237. (*c*) *Ibid page* 243. (*d*) M. Simon, *page* 646, *de ſon Mémoire.*

eaſy

eaſy to diſtinguiſh this faulty conformation of the bones of the baſon, by the touch, there is a clear certainty in ſuch caſe, of the abſolute neceſſity of the operation, when it is performed.

The other caſe is (*e*) that, *where the child is produced out of the* uterus *and is incloſed in the cavity of the* abdomen; *and where it has attained to its full time alive*, which I believe to be impoſſible, *or rather being dead, it threatens the mother with the ſame fate.* To which, muſt be added, the pregnancies of the Fallopian tubes and *ovaria.* In which, the life of the mother can be ſaved by no other means than making an inciſion into the belly: as in the caſe related by Mr. Cyprianus, profeſſor of anatomy and ſurgery at Frankfort (*). A certainty may be gained of theſe ſtates by examining the condition of the *uterus*, which is found ſmall, and conſequently empty, at the ſame time, that a conſiderable largeneſs is found in the *abdomen*, on the right or left ſide.

The third caſe, which I am of opinion ſhould be added, is that, where, in a hard labour, the child being vigorous, and placed croſs-wiſe in the *uterus*, which at the ſame time is thin, breaks through the membranes of one of the ſides, either by its head or feet; and forces a paſſage into the *abdomen.* This caſe is evident, when in a hard labour the child is no longer perceived in the *uterus*, but in the cavity of the *abdomen.*

In the firſt caſe, where the child is in the *uterus*, it is neceſſary to perform the whole

(*e*) M. Levret, ubi ſupra, page 241. (*) *Epiſtola Hiſtoriam referens fœtus humani poſt.* 21. *menſes ex uteri tubâ, matre ſalvâ ac ſuperſtite exciſi.*

operation, and cut the *uterus* as well as the *abdomen*; which renders the danger greater. In the other two cases, nothing more is required for extracting the child, that is in the cavity of the *abdomen*, than to make an incision in its integuments; which renders the operation less painful and hazardous.

CHAP. VII.

Important observations on the duties of Midwives in the exercise of their professions.

THESE reflections have three objects in view; the conduct midwives ought to pursue in clandestine deliveries; that is to say, with regard to unmarried women, or wives, who go to lye in privately with them; the attention they ought to have to make persons whom they assist in labour, administer in case of danger; and lastly, the care they ought to take, that baptism be conferred on children, which are in danger of dying. The duties of midwives, as to these three articles, are so certain and evident, that nothing more is required, than to point them out, in order to make them be understood.

ARTICLE I.

Of the conduct, which midwives ought to pursue, in the clandestine deliveries, that are made with them.

CHARITY ought to engage us to take care, as far as we can, of the salvation of those with

with whom we have any concern. The duty of their profeſſion obliges midwives, to have a more particular attention to that of women who lye in under their care: and when the delivery becomes difficult, and gives any reaſon of apprehenſion for their lives, they ought to have them appriſed of it; or, if it be proper, to appriſe them themſelves, of the neceſſity they are in, of properly preparing for all events.

This duty, which is incumbent on midwives at all times, puts them in different ſituations in different caſes; and often in ſuch as are embarraſſing; and which it is therefore of conſequence to explain.

I. There is no difficulty in common caſes, where a woman is in labour in the midſt of her family. In this circumſtance, the greateſt part of decent women do not neglect to perform the proper acts of devotion before their labour comes on; and, in caſe any accident happens afterwards, which gives any room for fear, by informing the family of it, the woman in labour is diſpoſed without any trouble, to go through the offices of religion.

II. There is more trouble with regard to unmarried women, or wives, who go to lye in at the houſes of midwives. As they have led irregular lives, they are perhaps yet poſſeſſed of criminal inclinations. They have no proper diſpoſition to a right preparation; and, to evade it, they avail themſelves of the pretence of the neceſſity there is for their keeping themſelves concealed; which does not permit them to ſhew themſelves to a confeſſor, or miniſter. As every thing depends on the midwife; and there is no perſon elſe can interfere; it is fit ſhe ſhould re-

double her zeal, and make them ſenſible, that the further they are out of the right road of their ſalvation, the more they ought to haſten to get back into it, by confeſſion, and communion; and ſhe ſhould let them know, that if they refuſe to comply with her requeſt, her duty obliges her to inform the miniſter of the pariſh, whoſe exhortations may have more power than her repreſentations: ſhe ſhould further inform them with regard to the fear, which they may have of being diſcovered, that in receiving the confeſſor, care ſhall be taken to ſhut the window's and to have the room dark; under pretence that the light may be injurious: that the ſame precautions, ſhall be uſed, as to the communion; as there ſhall be only one taper lighted, and that ſhall be kept behind her head; and, that, by theſe precautions, and pulling a hood over her face, ſhe need not fear to be diſcovered.

III. The greateſt difficulty which the midwives have, is, when they are concerned with an unmarried woman, or wife, whom deſpair has urged to deſtroy her offspring. Happily the caſe is rare. As ſuch women are conſcious of the heinouſneſs of their guilt, they deſpair of the mercy of God; and abandon themſelves up to their miſerable fate. But the more deplorable their condition is, the more the charity of the midwife ſhould inſpire her with ingenuity, to give them ſome comfort, by repreſenting, that there is always room to hope for the mercy of God, provided they join to a lively ſincere contrition, the uſe of the ſacraments; which are a great fountain of grace. As to the reſt, as it is of much conſequence to the women not to be known,

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ſhe ſhould promiſe them to employ all the precautions that have been enumerated in the preceding article; which ſhould be faithfully and carefully executed.

ARTICLE II.

What care the midwife ſhould take, that baptiſm be conferred on children, who are in danger of dying.

RELIGION teaches us, that we muſt be waſhed in the ſalutary waters of baptiſm, in order to partake of the glory of paradiſe. Charity muſt, therefore, induce us to procure the benefit of baptiſm to all children, which are in danger; and religion renders it a duty to us. This duty is particularly incumbent on midwives who receive into their hands children, when firſt born: and who are capable judges of their condition. They may, in this view, lye under three different circumſtances.

I. When the child is born, and there is danger of its dying, if there be near the delivered woman any prieſt, or grave perſon, the midwife muſt commit the function of baptizing the child into his hands. If that be not ſo, ſhe muſt baptize it herſelf; but, ſenſible of the importance of the office, ſhe takes upon her, ſhe muſt reflect ſome time before on her own ſtate; and excite, in her mind, a due ſenſe of contrition, and love of God. In order to the validity of baptiſm, there are two things required: that the water ſhould be immediately applied on ſome part of the body of the child, and preferably on the head; and that the form

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of words of baptiſm, ſhould be pronounced at the ſame time, with an audible voice.

On theſe two principles, the midwives muſt conduct themſelves. In common caſes, that is to ſay, when they baptize a child, which is juſt born, they muſt ſprinkle it on the naked head; and if it be in winter, or in cold weather, they ſhould uſe warm water. If the child be of a monſtrous kind, they will do well to conſult ſome intelligent perſon about it; but, if there be no time to loſe, they ſhould baptize conditionally: ſaying, *if thou be human, I baptize thee, &c.*

It ſhould be obſerved, that, in order to authorize a midwife to confer baptiſm, it is neceſſary the danger be urgent. Otherwiſe, order requires, that they ſhould bring to church, thoſe children which are in a condition to be carried thither: but in caſes of doubt, it is better to baptize four children, that might, perhaps, have been carried to church, than to ſuffer one to die without baptiſm, through too much caution.

II. It ſometime happens, that the child, being retained in the womb of its mother, where it is ill placed, preſents an arm or a leg; and that in this ſtate, when the midwife finds it, there is juſt reaſon to believe, the child may die, in conſequence of the length, or violence of the labour.

In ſuch caſe, there is no doubt, but that baptiſm ſhould be conferred on the child, by pouring water on the limb, which appears; and pronouncing, at the ſame time, the form of words.

III. A third caſe more difficult, is liable to happen, when no limb of the child can be ſeen;

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ſome part of it may yet be touched; and water can be conveyed to it, by the way of injection. There has been a doubt, for a long time, whether or no baptiſm ſhould be conferred in this manner. But at preſent, the common opinion of all divines is, that baptiſm may, and ought to be, conferred in this way: and that it is valid. The proofs will be found at the end of this chapter.

It is, therefore, the right method to be followed in ſuch caſe; and in order to carry it into execution, it is neceſſary, to touch ſome part of the child nakedly, diveſted of its coverings.

A little clean ſyringe muſt be procured: of which the pipe ſhould be at leaſt, five or ſix inches long, and made blunt and round: and it muſt be filled with clean warm water.

The left hand, well greaſed, muſt be afterwards introduced into the *uterus*, till ſome part of the child, which has been already diſtinguiſhed, is felt. After which, the pipe of the ſyringe ſhould be introduced, along the hand, till the end touch the part of the child. Then the piſton muſt be puſhed: and the water will be ſpread on the naked part of the child: the form of words being at the ſame time, duly pronounced.

DECI-

DECISION

OF THE

Doctors of the Sorbonne,

ON THE

Validity of Baptism conferred on Children by Injection.

A SURGEON *accoucheur* makes a repreſentation to the doctors of the Sorbonne, that there are caſes (though very rarely) where a mother cannot be delivered, and where, at the ſame time, the child is ſo incloſed in the womb of the mother, that no part of its body can appear: which would otherwiſe make a caſe, according to the ritual, for conferring baptiſm on it, at leaſt, under condition. The ſurgeon, who deſires advice, alledges, that, by the help of a little pipe, the child may be immediately baptized, without any injury to the mother. He demands to know, if the method he has propoſed, be fitting and legal: and if it may be uſed in the caſes he has mentioned?

ANSWER.

ANSWER.

THE council are of opinion, that the queſtion propoſed carries great difficulties with it. Divines lay it down, on one hand, as a principle, that baptiſm, which is a ſpiritual birth, ſuppoſes firſt a natural one. It is proper to be born in the world, in order to be born again in Chriſt, as they teach. Saint Thomas lays down this doctrine as a conſtant truth. One cannot, ſaid this holy doctor, baptize children which are incloſed in the wombs of their mothers. *Nullo modo, infantes; in maternis uteris exiſtentes, baptiſari poſſunt.* And he founds it on this, that ſuch children are not born, nor can be reckoned among mankind. From whence he concludes, that they cannot be the object of an exterior action, to receive, by their miniſtry, the ſacraments neceſſary to ſalvation. *Pueri in maternis uteris exiſtentis nondùm prodierunt in lucem, ut cum aliis hominibus vitam ducant; unde non poſſunt ſubjici actioni humanæ, ut per eorum miniſterium. Sacramenta recipiant ad ſalutem.* The rituals ordain in practice, what the divines have eſtabliſhed, on the ſame ſubject: and they, in an uniform manner, forbid all perſons whatever, to baptize children incloſed in the womb of their mother, if ſome part of their body do not appear.

This conformity of the divines, with the rituals, which are the regulations of dioceſes, appears to conſtitute an authority that ſhould determine the preſent queſtion. Nevertheleſs, the council of conſcience, conſidering, on one hand, that the reaſoning of divines, is only found-

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ed on the notion of the fitneſs; and that the prohibition of the rituals, ſuppoſes children thus incloſed in their mother's womb, cannot be immediately baptized, which is contrary to the preſent ſuppoſition; and, on the other hand, that the ſame divines teach, the ſacraments, which Jeſus Chriſt has eſtabliſhed, may be riſqued, as methods which are eaſy, but neceſſary to ſanctify men; and, moreover, holding, that the children, incloſed in their mother's wombs, may be capable of ſalvation, becauſe they are ſubject to damnation; for theſe reaſons are, as well as on account of the matter now laid before them; which certifies, that, a certain way is found of baptizing children, thus incloſed, without harm to the mother, of opinion, that the way propoſed, may be made uſe of, in the confidence there is, that God has not left theſe children without any means of ſuccour; and ſuppoſing, as it is alledged, that the method in queſtion is proper to procure them baptiſm. Nevertheleſs, as it is in queſtion, alſo, by authoriſing the propoſed practice, to change a rule univerſally eſtabliſhed, the council believe, that the perſon, who conſulted them, ought to addreſs himſelf to the biſhop, under whoſe juriſdiction he lives; to whom it belongs, to judge of the utility, or danger of the method propoſed. And as, under the good pleaſure of the biſhop, the council are of opinion that he ought to have recourſe to the pope, who has the right of explaining the rules of the church, and to deviate from them in caſes where the laws do not bind, however wiſe and uſeful the manner of baptiſing in queſtion may appear, the council cannot approve of it without the

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concurrence of these two authorities. They advise, the consulting person, to address himself at least, to his bishop; and to communicate to him the present decision; in order, that, if the prelate assent to the reasons on which the undersigned doctors found their opinion, he may be authorized, in a case of necessity, in which there would be too much risk in waiting for permission to be demanded and granted, to employ the means, which he proposes, as of so much advantage to the salvation of the child. Moreover the council, in holding that he may make use of it, believe, nevertheless, that if the children in question should come into the world, contrary to the expectations of those who have made use of this method, it would be necessary to baptize them again, without condition: and, in this, the council are conformable to all the rituals, which, in authorising the baptism of any child, whereof any part of the body appears, enjoin, nevertheless, and order, that it should be baptised again, without condition, in case it happily come into the world afterwards.

Deliberated at the Sorbonne, April 10, 1755.

A LEMOYNE, & DE ROMIGNY,
DE MERCELLY.

Mr. Gamache, an eminent doctor, has decided the same question in the same manner. *De sacram: baptismi ad questionem*, § 681. *art.* 5. *n.* 11.

Notandum tamen quod si puer ita inclusus possit aspergi realiter quod aquâ naturali, per aliquod instrumentum, & verba formæ proferantur, cum debitâ intentione, cum fore validé baptisatum; quan-

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quam ad majorem cautionem, ſit poſteá baptiſandus, ſaltem ad minus ſub conditione.

" It is proper to remark," ſays this author, " that if they can, by the aid of any inſtrument, " throw water on the body of the child incloſed " in the womb of the mother, applying, at the " ſame time, the form of words of baptiſm, " ſuch child would be truly baptiſed: though " it would be prudent to baptize it again, with- " out condition, if it come into the world."

ANSWER

ANSWER

TO A

LETTER OF MR. D. F. B.

ON THE

Conduct of ADAM and EVE, with regard to their first Children.

YOU are engaged, then, Sir, in *dispute* with a philosopher of the times, on the manner in which Adam and Eve acted with respect to the umbilical cord, and the after-birth of their first children. "*Did they tye, and cut it,* "*as is practised at present?* But you have ob- "jected, *How could they know this practice?* "*Who could have taught it them?* They were "created without any navel; and they had ne- "ver before seen a child born with one. *Did* "*they not tye and cut it? These children would* "*then have all died.* That is a truth acknow- "ledged by all physicians: and thus the hu- "man race would have been lost."

You remark to me, Sir, that this objection has staggered you: and you desire me to point out to you, the manner of answering it. But you do not appear very much shocked at the air

of ſufficiency, and the bantering tone, with which it is propoſed to you. Do you not know that it is the manner of theſe gentlemen? Full of the ſublimity of their own lights, they believe, that the ſlighteſt difficulty they can ſtart, muſt overturn the moſt reſpectable truths. But they do not long enjoy this vain triumph. They are anſwered: and then they are confounded.

It reſembles the ſituation of him, whom Horace thus (*a*) ſpeaks of:

Qui fragili quærens illidere dentem. Offendi ſolido.

This is particularly the caſe of your philoſopher. Nothing can be more frivolous than his objection. I here ſend you three or four anſwers, in order to give him his choice of them. They are all plauſible: and, I may venture to ſay, they are all concluſive.

FIRST SOLUTION.

ADAM muſt have been ſurpriſed, when Cain was born, to find a ſhapeleſs maſs, known at this time under the name of *placenta*, faſtened to his navel, by a long ſtring, or cord. It may be concluded, that he did not dare to meddle with it: ſuppoſing it might be a part of the body of the child. In this country, ſuch a *placenta* being full of blood, on account of the ſtronger and more plentiful food, of women, would ſoon contract a diſpoſition to putrefy: but there is reaſon to believe, that, in the country where Adam was, which is hotter than ours, it would dry: eſpecially, conſidering that it would be leſs replete with blood, becauſe of the

(*a*) *Satyrarum* II.

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ſparing nouriſhment of Eve, who lived on fruit. But, waving that, let us ſuppoſe it ſhould putrefy immediately, as it would in this country, Adam and Eve would not remain a long time incommoded with it. For, on the fifth or ſixth day, the cord would ſeparate; and the child would be freed from this alien body: which was no proper part of itſelf.

Adam availed himſelf, without doubt, of this experience. He would conceive, that this maſs did not belong to the body of the child: and that it might, and ought, to be ſeparated from it. Thus prompted, by his recollection of the former caſe, he would cut the umbilical cord of Abel, his ſecond ſon; and, ſeeing it diſcharge a little blood, he would tye it. It appears, therefore, that the cutting, and tying the cord, were known and practiſed by Adam, on the birth of his ſecond ſon: and conſequently, that the human kind were thus preſerved.

SECOND SOLUTION.

ADAM knew the nature of animals: as, in the time he was in the terreſtrial paradiſe, he gave names to each kind; which expreſſed their qualities. He underſtood, therefore, from having ſeen it many times, that the young of all quadrupeds, were born with a formleſs maſs, faſtened to their navel, by the umbilical cord. He knew, likewiſe, that all females, even thoſe which do not feed on fleſh, after having been delivered of their young, eat this maſs, or *placenta*; cut the cord with their teeth; and thus freed their young from it.

Adam would take the advantage of these examples, when his wife, driven with him out of the terrestrial paradise, began to have children. I shall not insist on it, that Adam eat the after-birth; but he might very well cut the cord with his teeth. The savages of Brasil did thus, when the French arrived there: as John Lery testifies, in the history of his voyage to Brasil, *chap.* xvi. At least, Adam might judge, that as the cord could be cut without danger, by the teeth, it might be cut likewise by any other way: and he would do it accordingly. It is true also, that seeing the blood was discharged from the end, that belonged to the child, he would tye it. The cutting and tying would be thus established; and the human race preserved, in the same manner, on this second supposition.

THIRD SOLUTION.

I WILL go further back, and suppose that Adam, not being satisfied at the after-birth and cord, that hung at Cain's navel, tore them off. What would then happen? The certain death of Cain, says your philosopher. Such is the unanimous opinion of all physicians, as he pretends. But he is mistaken. Both are torn off constantly, at the birth of all calves, without any hœmorrhage following. They are torn off in the same manner, from pigs, without any danger. They have been many times, torn off from the human *fœtus*, by carelessness, without any fatal accident.

On this head, may be consulted the two dissertations of John Henry Schultze, professor of physic at Hall, both in the *collection of the anatomical*

anatomical theſes of Mr. Haller: vol. X: the one, *de vaſis umbilicalibus natorum, & adultorum:* and the other, an *umbilici deligatio, in nuper natis, abſolute neceſſaria ſit.* Where he concludes negatively. And that of John George Rocderer, profeſſor at Gottingen, and a celebrated *accoucheur*, printed in the ſecond part of his *opuſcula medica*; and intitled, *de funiculi umbilicalis deligatione non abſolute neceſſaria.* In theſe diſſertations, the phyſicians cite many authors, who have been of the ſame opinion as themſelves; and who have related many obſervations of children, on whom no ligature has been made; and who have, nevertheleſs, lived.

It is true, a great number of contrary obſervations are objected, which might decide, that the tying the cord has always been neceſſary; if, by what is done, at preſent, we muſt judge of what was done in the beginning of the world. But we muſt judge of it, on a more certain principle. God has provided for the preſervation of the young of all quadrupeds, which are born with an after-birth, as well as children, without their having occaſion for any help. There is reaſon, therefore, to conclude, that he has had, at leaſt, as much care for the preſervation of children, which are the moſt noble of his works; that he has, conſequently, eſtabliſhed, in the order of nature, wiſe laws, in order to effect all that might be neceſſary for their preſervation; and that he would not leave it to men to provide, by their ſkill, what he ſhould ſeem to have neglected to do himſelf.

This concluſion becomes almoſt a demonſtration, if we compare the changes, which happen to the cord, with the other changes perceived in

the bodies of children at their birth. An arterial canal, and an oval hole, are neceſſary, to ſupport the circulation of blood, while the child muſt remain in the womb of its mother, without breathing: but theſe communications become uſeleſs, as ſoon as it begins to breathe: and then they cloſe of themſelves. The umbilical veſſels are neceſſary, in like manner, for the nouriſhment of the *fœtus*, before its birth: but they are of no farther uſe, as ſoon as it is born. They muſt cloſe then; and of themſelves: becauſe it is unworthy God, to think, that he has left his works imperfect; and that he has reſigned this point to the care or ſkill of men.

There may be perceived in the ſtructure of the bodies of children, a mechaniſm to bring about this change. The cord is formed, as is well known, of a vein and two arteries. During the ſtay of the child in the womb of its mother, theſe veſſels, being neceſſary to convey nouriſhment to it, are full of blood: but as there is no more uſe for them, when the child is born, they then change their ſtate. Nothing runs then through the vein: and it muſt, therefore, contract, by the elaſticity of its coats. If any blood yet flows in the umbilical arteries, it is but little; in conſequence of the change that has happened in the direction of the iliac arteries, from whence they have their origion. Theſe arteries are curved in the form of an elbow, during pregnancy; becauſe, the *fœtus* being rolled up, like a ball, its thighs are bent againſt its belly. In this poſition, the arteries that are below this curve, muſt receive but little blood; and the greateſt part muſt then be turned into the umbilical arteries,

teries, whoſe origin is above it. But every thing is changed, as ſoon as the child is born. The legs are extended; a direct way is opened to the blood in the iliac arteries; and it no longer paſſes through the umbilical arteries, or but in a ſmall quantity; and, conſequently, theſe arteries being empty, or, at leaſt, leſs full, contract, as well as the umbilical vein, by the elaſticity of their coats; and loſe their office.

This is not all yet; the elaſticity of the tendinous circle, which ſurrounds the navel, was a counterbalance to the umbilical vein and arteries, as long as theſe veſſels were full of blood; but, as ſoon as they are empty, or leſs full, the elaſticity prevails; and, by its contracting power, muſt complete the contraction of theſe veſſels, ſo as to hinder all diſcharge of blood, which gives riſe to the means of tearing off the cord, in many caſes; or, at leaſt, of leaving it untied, without any danger; as has been many times obſerved.

Theſe advantages muſt have been great, in the children of our firſt parents; becauſe Eve, who was temperate and laborious, furniſhed little blood to her children; and theſe veſſels muſt conſequently be leſs dilated. Beſides, thoſe children were ſtronger, had more elaſticity, and the coats of their veſſels muſt have contracted more quickly and ſtrongly. In the children of Eve, therefore, the cord muſt have contracted of itſelf without any ligature. This advantage ſubſiſts yet in other animals; becauſe they continue the ſame kind of food, they have always eaten. But it does not now ſubſiſt in us, or but very rarely; becauſe we have deviated from the regimen of our firſt parents. Preg-

nant women eat much fleſh, and other nutritious aliments; make conſequently too much blood; and ſupply too much to their children: which renders their umbilical veſſels too large. On the other hand, the eaſy life they lead, makes their children to be weaker; and formed with fibres, that are lax, and unfit to cloſe great veſſels. For which reaſon, there is occaſion to tye the cord, in order to ſupply the deficiency of theſe two cauſes.

I here finiſh this digreſſion: and infer from what I have ſaid, that Adam might tear the umbilical cord of Cain, without any danger of hurting or deſtroying the human kind; as your philoſopher has endeavoured to make you fear. It is true, indeed, that, as perhaps, from tearing the cord, he might ſee, a bloody *ſemen* ouzed for ſome time after from the navel, he would have recourſe to the tying the cord of his other children, as is practiſed at preſent.

You ſee here, ſir, ſeveral ſolutions of the difficulty of your philoſopher. You may leave him the liberty of chuſing which he will take. They are all plauſible and concluſive. As to myſelf, I do not adopt any of them: which you may perhaps wonder at. But I believe, I can give an anſwer to your philoſopher in a more general and deciſive manner: which I ſhall here communicate to you.

FOURTH SOLUTION.

I CONCEIVE, ſir, that he who taught the birds he had created, before they had ever ſeen any neſts, to build them with a marvellous art,

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in order to lay their eggs in them; firmly faſtened to branches of trees; furniſhed on their inſide with moſs, wool, and feathers; and proportioned to the ſize of their young; inſtructed, in like manner, Adam and Eve, in the conduct they ought to purſue at the birth of their children, for the due preſervation of them: ſuppoſing their aſſiſtance was neceſſary. This might be, if you pleaſe, by an inſtinct; which would be afterwards weakened and effaced (*c*), when they began to act by the lights of reaſon; and there was no longer any occaſion to truſt to inſtinct. Or, what appears to me more plauſible, it might be by an expreſs revelation. But it is evident, he who taught all quadrupeds what they ought to do, to ſave their young at their birth, would not abandon man, who is the moſt perfect of his creatures, to ignorance in the ſame caſe.

There is nothing ſurprizing in it, that God ſhould inſtruct Adam how he ſhould manage to preſerve the children, that were borne to him. It is certain, that he deigned to give inſtructions to men in the beginning of the world on ſubjects much leſs important. Adam (*d*), being in the terreſtrial paradiſe, gave all kinds of animals the names (*e*), *which were proper to them.*

(*c*) In this manner, pigeons and domeſtic turtles loſe the inſtinct of making their neſts, after they have been made for them: whereas, wild pigeons and turtles preſerve it.

(*d*) *Formatis igitur dominus deus de humo cunctis animantibus terræ, & univerſis volatilibus cæli, adduxit ea ad Adam, ut videret quid vocaret ea: omne enim quod vocavit Adam, animæ viventis, ipſum eſt nomen ejus.* Geneſ. II. 19.

(*e*) *Qui primus, quod ſummæ ſapientiæ Pythagoræ viſum eſt, omnibus rebus impoſuit nomina; . . . . aut qui ſonus vocis, qui infiniti videbantur, paucis literarum notis terminavit?* Cicero, *Tuſculan. quæſt. libro* I. 11.

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He had, therefore, a language, and even a copious one; of which he knew the value of all the words: and how could he acquire naturally, in ſo little time, that knowledge, which is the fruit of long experience, and of *(f)* profound wiſdom? Cain, the ſon of Adam, was a huſbandman, and he offered the fruits of the earth to God, who had taught him to cultivate it; and had ſhewn him the inſtruments neceſſary for that purpoſe. Afterwards Tubal Cain (*g*), the fifth deſcendant from Adam, exerciſed *the art of working with metals: and was expert in all ſorts of manufacturing of copper and iron.* Theſe metals were, therefore, known in theſe times; and how could they be ſo? They are hidden under the earth; and in a form, which renders them not diſtinguiſhable, till they have undergone repeated operations, which make them appear in their natural form. In the time of Tubal Cain, could mines have been diſcovered, which might furniſh the copper and iron: and were the means of preparing them found out? Certainly not. How, then, to account for theſe facts: if not, by acknowledging that it was God, who had taught Adam the language which he ſpoke; Cain the art and means of cultivating the earth, which he practiſed; Tubal Cain the knowledge neceſſary to find, work, and prepare metals: and, in ſimilar circumſtances, why ſhould we not ſay likewiſe? It was God who taught Adam, what he muſt do for the preſervation of his children: ſuppoſing any occaſion had been left for him to do it.

(*f*) Geneſ. III. 2. & 3. (*g*) Geneſ. IV. 22.

FIFTH

FIFTH SOLUTION.

HITHERTO I have done nothing more, than ſupply you with the means of anſwering your philoſopher. It is now time to change the ſcene; and, retorting his argument upon him, oblige him to anſwer himſelf. Theſe gentlemen believe themſelves very ſtrong, when they make an attack: but they prove weak, when they are forced to defend themſelves. At preſent, it is a very eaſy matter for you to reduce your philoſopher to this ſtate.

Human kind exiſts. It is neceſſary, therefore, either that it began to do ſo, by the will of God, which created it: or, that it has exiſted neceſſarily; and from all eternity.

If your philoſopher takes this firſt poſition, his opinion does not differ from that of the church; except in giving too much antiquity to the world; and ſuppoſing that it has been created fifty hundred thouſand years. On this ſuppoſition you will make to him, with reſpect to his Adam and Eve, that is to ſay, his firſt man and woman, whom God created, according to him, fifty hundred thouſand years ago, the ſame objection he has made againſt our Adam and Eve, created ſix thouſand years ago: and you will declare to him, that you will make uſe, in order to anſwer him, of what he himſelf will adopt to get out of the dilemma.

But, if he take the other poſition, and dare to ſupport, that human kind exiſt neceſſarily, and from all eternity, he muſt conſequently admit a neceſſary, and eternal ſeries of individuals, all contingent: which is a palpable abſurdity, that in-

includes a manifeſt contradiction; to wit, a neceſſary ſeries of contingent individuals. Let it be as it will, ſir, do not ſplit the cauſe. The men of that ſeries muſt either have learnt, by repeated obſervations, to tye the umbilical cord of their children; and, in this caſe, before they had acquired that knowledge, human kind would have been all the time loſt; or this knowledge was neceſſary, and innate in them, which is a freſh abſurdity: though that is no matter of wonder, Sir; for abſurdities bring on each other. In this caſe, you may tell him, that you admit, in the ſame manner, in the firſt men of your created *ſeries*, the ſame innate knowledge, but not neceſſarily. For God has given it to them; that is to ſay, you will beat him with his own weapons, after having diveſted them of the impiety with which he had loaded them.

Show this writing to your philoſopher. If he will read it with attention, I hope it will drive him from the confidence, which he has in his opinions. But I wiſh that my reflections may have a yet more happy effect: and that they may bring him back to right reaſon; and induce him to have more reſpect for the truths of revelation.

I am, *&c.*

A P-

APPENDIX.

I.

Forms of the Remedies directed in this Work; as they are found in the *Pariſian Pharmacopeia.*

Theriaca.

IT is not thought requiſite to give the recipe for the Theriaca, as the compoſition is neceſſarily of the ſame general nature, with that of the London, and other Pharmacopeia's, and the only variation of moment, in any of them, to which the preſcriber is to have attention, conſiſts in the proportion that the quantity of opium bears to the whole quantity of all the ingredients collectively. This is very proper to be known, in order to judge of the correſpondent doſes, where there is occaſion for ſubſtituting one for the other; as well as in order to judge of the abſolute quantity of opium given in a preſcribed doſe of the Theriaca, according to any of the forms of preparation.

The

The quantity of opium, in the Parisian Theriaca, is such, with relation to the whole, in the usual manner of preparing it, according to the recipe of the present Pharmacopeia, that one dram of it contains a grain of opium.

The quantity of opium in the London Theriaca, is as one to seventy-five of the whole: and one dram and a quarter of it, consequently contain a grain of opium.

Where one dram of the Parisian Theriaca is directed, and the London Theriaca is substituted for it, the quantity of the latter given, should be, therefore, one dram, and fifteen grains: and in proportion for any other doses.

Confection of Kermes.

This is the *confectio alkermes* of the Parisian *Pharmacopeia:* and is thus directed to be prepared:

Take, of the powder of the kermes grains, or berries, one ounce; of yellow sanders, one ounce and a half; of aloes wood, half an ounce; of Rhodium wood, one dram and a half; of red roses, six drams; of cinnamon, three ounces; of cassia lignea, three drams; of cochineal, two drams; of prepared oriental pearls, and prepared red coral, each one ounce; and, of leaf gold, one scruple. Reduce them to a very fine powder *secundem artem.* Then heat four ounces of syrup of kermes berries, *in balneo maris*; and pass it through a hair sieve. Afterwards bring

bring it to the conſiſtence of a ſyrup, in *balneo maris*; to which, when almoſt cold, add, of the above deſcribed powder, four drams. Mix them; and make a confection, *ſecundem artem*.

Lilium.

This is called *Tinctura Metallorum, ſeu Lilium Paracelſi*, in the Pariſian *Pharmacopeia*: and is there ordered to be thus prepared:

Take, of regulus of antimony, copper, and tin, each four ounces. Being powdered, and mixt together, fuſe them according to art, into a *regulus*, called the *regulus metallorus*. To this, being powdered, add, of the pureſt nitre, and of tartar, powdered, each one pound and two ounces; and mix them well together.

Throw the powder, at ſeveral times, into a red hot crucible: and let it detinate. Then keep the whole in a ſtate of fuſion, by a very ſtrong heat. Put the matter taken out of the crucible, and groſsly powdered, while it is yet hot, into a mattraſs; and pour on it, of rectified ſpirit of wine, a ſufficient quantity. Digeſt this mixture, for ſeveral days, in a ſand heat, ſometimes ſhaking it up; and a ſaturated tincture will be obtained.

Vulnerary

Vulnerary water.

This is the *aqua vulneraria* of the Parisian *Pharmacopeia:* and is thus prepared:

Take of the roots, and leaves, of comfrey, and of the leaves of the oxeye daisy, the common daisy, bugle, sanicle, betony, figwort, plantain, agrimony, Saint John's wort with the tops, perivincle, ground ivy, mugwort, female fluellen, vervain, orpine, and yarrow, each four ounces; of the leaves and tops of the sage of virtue, angelica, garden tansie, wormwood, French sea wormwood, summer savory, celandine, fennel, creeping birthwort, mint, hyssop, and tobacco, each eight ounces; and of the leaves and tops of basil, rue, thyme, cammomile, water-germander, marjorum, rosemary, and golden-rod, each four ounces. Being chopt small, mix the whole together; and then add, of the dried tops of lavender with the flowers, one pound; and of the tops and flowers of wild majorum, and calamint, and of dried elder flowers, each six ounces. After a proper maceration, in sixty pints of white wine, distil off half in *balneo maris.*

Rabel's

Rabel's water.

This is the *aqua Rabelliana, vulgo* EAU DE RABEL, of the Parisian *Pharmacopeia:* and is thus prepared:

Take of oil of vitriol, four ounces; and of rectified spirit of wine, twelve ounces. Pour the oil of vitriol gradually to the spirit of wine, contained in a mattrass; and let them digest, keeping the vessel closed.

The unguent of LA MERE.

This is the *unguentum fuscum, vulgo* DE LA MERE of the Parisian *Pharmacopeia*; and is thus prepared:

Take of hog's lard, fresh butter, yellow wax, mutton suet, and prepared litharge, each eight ounces; and of olive oil, one pound. Boil them, in the manner proper for making plasters, till the mass becomes of a black brown colour.

Syrup of capillair, or *maiden hair.*

This is the *syrupus capillorum veneris* of the Parisian *Pharmacopeia*; and is thus prepared:

Take of Canadian maiden hair, one ounce; and let it be infused, for two hours, in six pounds of boiling water. Then strain off the

fluid; and, with four pounds of white ſugar, make it into a ſyrup. It may be aromatized with orange flower water.

The *anodyne tincture*, and the *plaſter of Madam Fouquet*, of which the uſe is alſo directed in this work, are not to be found in the Pariſian *Pharmacopeia*, nor in Baume's *Elemens de Pharmacie*, the neweſt and moſt ample French work on this ſubject. As we preſume, therefore, they are not publiſhed, we had no means of giving them here along with the reſt, as we otherwiſe ſhould certainly have done.

APPENDIX.

II.

Containing illuſtrative remarks on conception and pregnancy: and on thoſe particulars in the practice, taught by Dr. Aſtruc, which vary from the methods adopted by the beſt *accoucheurs* here.

CHAP. I.

Illuſtrative remarks on conception and pregnancy.

SECT. I.

On the exiſtence and form of the animalcula in ſemine.

IT has been a received opinion, for a conſiderable time, that *animalcula*, which are viſible by the help of good microſcopes, exiſt in the *ſemen* of men: and it has been further believed, that theſe *animalcula* are incipient embryos, which, eſtabliſhing themſelves firſt in the female *ova*; and afterwards, by means of them, in the *uterus*; grow there to be perfect embryos, and,

in due courſe of time, fœtuſſes and children. As *Leuhenhoeck* and *Hartſoeker*, who firſt publiſhed this notion of *animalcula in ſemine* to the world, aſſerted their exiſtence to be matter of fact, evident to the ſenſes, it ſoon gained ground: and being ſupported by others, who declared they had made the ſame obſervations, it became a general opinion; and has prevailed, till lately, as an almoſt uncontroverted truth.

Dr. Aſtruc adopts it, in his *treatiſe on the diſeaſes of women*; in which, he gives the theoretic principles of this work: and, not only taking it as a poſitive article of belief, that there were ſuch *animalcula*, but that they were of the form of *worms*, founded on thoſe points a theory, or much more properly, an *hypotheſis*, by which he attempted to explain the appearances, and accidents of conception and pregnancy.

It may, nevertheleſs, be reaſonably diſputed, whether there be at all any ſuch viſible *animalcula* in the *ſemen* of men: and, if there be, whether they are, in any manner, ſubſervient to generation.

The greateſt part of the pretended obſervers of theſe *animalcula*, have attributed to them the form of *tadpoles*; or ſmall animals, of which one part is round, and very thick; and the other long and ſmall. Dr. Aſtruc, in his deſcription of them in his *treatiſe on the diſeaſes of women*, gives them the form of *worms*; or, as he ſays, "*rother eels*:" and ſpeaks of their action; their vigorous, or their languid ſtate, at different times; and other accidents of their œconomy: from whence it might be reaſonably inferred that their figure was very conſpicuous with the help of glaſſes. But theſe varying accounts

counts by different perſons, of the ſhape, and other particulars of the ſuppoſed *animalcula*, ſhew that fancy, much more than actual obſervation, has directed the opinion of the writers, who have given them. For had the form of theſe moving *corpuſcula*, which have been deemed living creatures, been really diſtinguiſhable, they would have appeared alike to all; and not as reſembling tadpoles to ſome; and worms, or eels, to others: but being, in fact, too minute for the eye to perceive the form, the imagination, as is uſual in ſuch caſes, has ſupplied it: and neceſſarily produced that variation, we find in the accounts. How far fancy will lead thoſe, who ſuffer it to guide them in ſuch matters, is curiouſly evinced, in the inſtance of a writer of our own country; who ſays, that, in examining the *animalcula* in the *ſemen* of ſheep, he perceived they generally moved all the ſame way: which he imputes to the gregarious inſtinct of ſheep, that he ſuppoſed to prevail, even in the pre-exiſtent breed, the *animalcula* that were to produce them.

Laying aſide all fancy and credulity, the fact is, with relation to the appearances in the *ſemen* when firſt emitted, that a conſiderable briſk motion of many particles is ſeen, by the aid of very good glaſſes. But theſe particles are much too ſmall, to ſuffer their preciſe ſhape, ſuppoſing they have any that is common to the whole, to be diſcerned. The motion itſelf, likewiſe, of theſe particles, is ſo quick and general, as ſeems much rather the effects of an inteſtine action of the parts of the *ſemen* on each other, from ſome principle of effervеſcence or fermentation, than of animal life in them.

But unluckily for the animalcular *hypotheſis*, at leaſt as far as it reſpects generation, the ſame inteſtine motion is found in others of the viſcid humours, when firſt expoſed to the air, after their excretion. Whence, if *animalcula* be admitted, as a concluſion from this appearance, to exiſt in the *ſemen*, they muſt be allowed alſo in the other viſcid humours: which ſuggeſts a freſh doubt, whether or no they are ſubſervient to generation. Two queſtions, therefore, naturally ariſe hence: the ONE, *Whether theſe agitated particles be* animalcula, *or not?*—The OTHER, *Whether they have any particular concern with generation?*

As to the firſt; the perceptible *form* of animals in the moving particles being denied, it is the *motion* of them *only*, on which this ſuppoſition of their being animals can be grounded. Now, if we were to conſider, how frequently ſuch agitations of the parts ariſe in fluids, as well from the ſudden acceſs of air, as from the ſuperaddition of other bodies; and the briſkneſs and diffuſiveneſs of this motion of the particles in the *ſemen*, together with its very ſhort duration; we could ſcarcely, at this time, when effervescences and ferments are known to be ſo general to compound fluids, heſitate to aſcribe it to this cauſe, if we were entirely diveſted of any previous notion of, or prejudice for, the animalcular *hypotheſis*. But this is ſtrongly confirmed, when we recognize ſimilar motions in others of the viſcid humours of the body.

As to the ſecond queſtion: though we ſhould allow theſe moving particles to be *animalcula*, yet, if we find them in other of the animal humours, which have no relation to conception,

we

we cannot certainly infer, from their preſence in the *ſemen*, they have any particular concern with generation. As it is much more natural to conclude, they are in that humour, in common with the other viſcid fluids, from ſome general analogical reaſon reſpecting the whole; than that they ſhould be needleſsly in the others, when their exiſtence reſpected only the offices of the *ſemen*. *Natura nihil fruſtra fecit.*

The notion of the exiſtence of *animalcula* in *ſemine*, and of their concern in the propagative œconomy, may, therefore, be juſtly deemed a weak *hypotheſis*; founded principally on fancy. And Dr. Aſtruc has correſpondently made a very fanciful uſe of it, in the manner he has applied it, to account for moſt of the appearances and accidents of conception and pregnancy. As, however, with regard to all practical points, in which he may have been miſled by it, theſe illuſtrative remarks will correct his errors; it deſtroys the value and utility of his work, with reſpect to midwives, and the more unlearned *accoucheurs*. Since the deſign of it was, not to explain the animal œconomy, but to teach the art of delivery.

All, indeed, which it is neceſſary to know, and perhaps all which can be known, of conception, is, that, in the parts of females, formerly called *teſticuli*, and now, much more properly, *ovaria*, are produced ſmall round bodies called *ova*; which before their impregnation are ſmall, but afterwards grow larger; and, being, by ſome inexplicable mechaniſm, conveyed back through the Fallopian tubes to the *uterus*, adhere to it; and there become fœtuſſes, with their nutritive and veſtitive *apparatus*, of *placenta*, membranous coverings, and umbilical cord: and that the *ova*

remain in a paſſive and barren, though, in the proper age of the female, generally apt ſtate, till impregnated by the fecundating power of the *ſemen* of the male: which is, by ſome equally inexplicable mechaniſm, conveyed to the *ova* in the act of copulation I deem the mechaniſm, by which the *ſemen* is conveyed into the *ova*, equally inexplicable with that, by which the *ovum* is conveyed back from the *ovarium* to the *uterus*: becauſe the *hypotheſis*, that the orgaſm of coition produces convulſive motions of the *uterus*, which force the *ſemen* up the ducts of the Falliopian tubes, and at the ſame time bring down the *ovaria* to meet the ends or mouths of the ramifications of the ducts of thoſe tubes in the *fimbriæ*, does not appear ſufficient to account for thoſe impregnations, which take place when no penetration has been made into the *vagina*, on account of an imperforated *hymen*, or ſome preternatural membrane: of which there are ſeveral inſtances, in caſes too well atteſted to be denied. Certain known facts, likewiſe, reſpecting the copulative œconomy of ſome quadrupeds, render this method of accounting for the impregnation of the *ova* very dubious.

There are, moreover, very late obſervations of ſome particulars relating to the *ovaria*, and the ſuppoſed *diſcharge of a ſeminal fluid from them*; made by a gentleman, from whoſe ſagacity and application, the world may expect conſiderable advances in phyſiology. Could ſuch a notion of ſeminal emiſſion in women be carried to demonſtration, it would certainly render the generative œconomy ſtill more abſtruſe and incomprehenſible: as it would tend to confound our ideas of the male and female functions in gene-

generation; which now ſeem very clear: *viz.* That the office of fecundation lies in the male; and that of *utero*-geſtation in the female. The opinion of a critical ſecretion from the *ovaria*, at the time of the venereal orgaſm, does not carry with it ſo much difficulty: but in order to demonſtrate this to be a *ſeminal* ſecretion, it is neceſſary to prove, this fluid has a ſhare in the fecundation of the *ovum*; becauſe, certainly, the quality, which conſtitutes any fluid to be *ſemen*, is, the power of fecundation: and how ſuch a fecundating power can be demonſtrated, by experiment, is, I think, not conceivable. This ſecretion has, however, been called ſeminal by another gentleman, in his courſes of anatomy: and, in ſpeaking of it in that light, he has intimated, that much may be inferred from it in favour of the ancients, who held the doctrine of the female *ſemen*; and called the *ovaria*, *teſticuli*. I cannot admit, that, even if the fact of a female *ſemen* were eſtabliſhed, the ancients ought to derive any credit from it. For, if they had taken it from juſt obſervations, and adequate examination into the ſtructure of theſe parts, and the accidents attending their uſe, they muſt have diſcovered the exiſtence of the *ova*; and, conſequently, the more obvious uſe of the *ovaria*, in producing and containing theſe *ova*: whereas, they were wholly ignorant of them. Moreover, the true ſource of their ſuppoſition, that females produced a *ſemen*, and that the *ovaria* were *teſticles*, had its ſource in the abſurd notion, that there was a ſtrict analogy betwixt the parts of males and females, except with relation to magnitude and ſite: or rather, that a woman was an inverted man. On this

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foundation, without conſidering how diſtinct the offices of the male and female are in generation; which would neceſſarily argue an equal diverſity in the reſpective conformation of the parts; they only ſet themſelves about, to find a *likeneſs*, or *reſemblance*, in any of the parts of one, to any of thoſe of the other; in order to conclude a *ſameneſs*, from the appearance only. If, therefore, the ancients ſhould have proved to be right in this ſuppoſition, it ought not to give any weight to their general authority: becauſe, it was obviouſly adopted on erroneous principles; and not on the reſult of juſt reaſonings, or valid obſervations.

If the *animalcula* in *ſemine* were to be admitted, yet the particular *modus*, by which, according to Dr. Aſtruc, they are introduced into the *ova*, and implanted there; by which the *ovum* affixes itſelf to one conſtant part of the *uterus* only; and, by which the child is placed firſt with the head uppermoſt, and afterwards with the feet; is the work of a fruitful invention, building one *hypotheſis* on another, till a juſt ground of induction from facts is left out of ſight. His theory to account for the manner, in which the *animalcula* become conjoined with the *ova*; and the whole œconomy of both of them, on which it depends; are refuted by one ſingle fact. That is, the production of two fœtuſſes in the ſame membranous bag, or covering, which has ſometimes been found: and which Dr. Smellie, page 123 of his work, particularly mentions to have ſeen himſelf. Here two *animalcula*, if ſuch there be, muſt have poſſeſſed themſelves of the ſame *ovum*; which is wholly incompatible with Dr. Aſtruc's ſyſtem, of the fitneſs of the

the niche of the *ovum* to the form of the *animalculum*. Indeed it muſt be allowed, that this circumſtance perplexes all the *hypotheſes*, invented to account for impregnation: and evinces how far we are at preſent, from having diſcovered any certain principles relative to it. The other conſequences of Dr. Aſtruc's theory, the conſtant adheſion of the *ovum* to one particular part of the *uterus*; and the upright poſition of the head of the child, with the *culbute* or turning, are erroneous ſuppoſitions, with reſpect to the facts themſelves; as will be ſhown below: and, therefore, require no refutation, as to the reaſoning on the cauſe of them.

SECT. II.

Of the adheſion of the placenta *and* chorion *to the* uterus.

Dr. Astruc, depending on the miſtaken repreſentations of former writers; and on ſome deductions from his own theory, reſpecting the mechanical conſequences of the form of the *ovum*, and its ſtate in the *uterus*, after its paſſage through the Fallopian tube, has aſſerted, that the adheſion of the *placenta* to the *uterus* is always at the *fundus*. He ſays, *chap.* III. *ſect.* 2. "The "poſition of the after-birth in the *uterus*, and "that of the child in the after-birth, are too "conſtantly the ſame, to be the effect of "chance, always variable." And below, he ſays, "The after-birth maintains one conſtant "poſition in the *uterus*; owing to the *conſtant* "*adheſion* of the *placenta* to the *fundus*." This, to-

together with many other ſuch errors, was taught by the former writers on the ſubject: and Dr. Smellie is the firſt in our language, who has contradicted it. But he declares himſelf thus againſt it. "Formerly it was taken for granted, by many, that the *placenta* always adheres to the *fundus* of the *uterus*: but this notion is refuted by certain obſervations; in conſequence of which, we find it as often adhering to the ſides, back, and fore parts; and, ſometimes, as far down as the inſide of the *os uteri*." *See table* V, VI, VII, VIII, IX, X, XI, XII. He had good reaſon for ſaying, that it was formerly taken for granted: ſince even Dr. Exton, who wrote a treatiſe on midwifery, and publiſhed his third edition in the year 1753, aſſerts it, as an uncontroverted fact, in *pages* 128 and 132. The contrary is, however, confirmed by all the intelligent *accoucheurs*, or anatomiſts, of the preſent time: and, indeed, laying aſide Dr. Aſtruc's mechanical reaſonings on principles, which cannot operatively prevail in the caſe in queſtion, it may be juſtly concluded, that the adheſion of the *placenta* to the *uterus*, muſt happen in various parts of it: becauſe the contact of that part of the *ovum*, which becomes the *placenta*, with any particular part of the interior ſurface of the *uterus*, is wholly the effect of the accidental ſituation of the *ovum* in the *uterus*, and not dependent on any determining cauſe, which may produce a conſtant or regular poſition of the *ovum*.

But there is another opinion which Dr. Aſtruc entertained, that may be, likewiſe, preſumed erroneous: though he has, indeed, the authority of many writers on this ſubject for it. This is, *that*

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the placenta *only, and not the* chorion, *adheres to the* uterus.

There is, nevertheleſs, a multiplicity of reaſons for believing, that all the ſurface of the membranes, as well the *chorion* as *placenta*, which come in contact with the interior ſurface of the *uterus*, adhere to it: as the antients maintained.

In the firſt place, if we conſider the function of the *placenta*, which is, the receiving blood from the *uterus*; and collecting, from it the nouriſhment of the *fœtus*; we ſhall find, there is the ſame reaſon to attribute it to the *chorion*, in an auxiliary and ſubordinate degree: and the ſimilar conformation of the two parts ſupports this allegation. It is true, the whole ſubſtance of the *chorion* is not the ſame with that of the *placenta*; being of a more membranous nature: but it is every where diſſeminated with the ſame knotty plexuſſes, or complications of veins and arteries, obviouſly deſigned in both for the reception of blood from the *uterus*, for yielding nutriment to the *fœtus*. If we conſider this formation, comparatively with that of the quadrupeds, which have large *cotylidones*, ſpread over the whole membrane inſtead of a *placenta*; the analogical uſe of theſe knots, or plexuſſes, in the *chorion*, with thoſe in the *placenta*, will appear in a ſtill ſtronger light. Now, if the uſe of theſe knots, or plexuſſes, of blood veſſels, be as well in the *chorion*, as the *placenta*, the reception of the uterine blood, the intention is certainly effected by the ſame means in both; that is, by ſome peculiar union of ſuch plexuſſes with the veſſels of the *uterus* or the mother: and, conſequently, an adheſion muſt be, in like manner, admitted in both. It is true, ſome have allowed

lowed the uſe of the *chorion* to be, that of receiving ſome nutritive fluid, without allowing the adheſion; ſuppoſing it to be performed by an abſorbtion, in conſequence of contact only. But the great conformity in the texture of the knots, or plexuſſes, of blood veſſels, in the *placenta* and *chorion*, admitting them to have the ſame office, naturally infers it to be performed in the ſame manner: and as every part of the *uterus* is equally diſpoſed to an union with the veſſels of the membranes, there can be no reaſon why a proportionable adheſion ſhould not be ſuppoſed to be made.

In the ſecond place; if we conſider of how much importance it is, that the union of the veſſels of the membranes of the *fœtus*, with thoſe of the *uterus*, ſhould not be deſtroyed by any concuſſion, or violent motion; which, if in any conſiderable degree, cauſes abortion; a ſecondary office of the *placenta* ariſes; to which the aid of the *chorion* is extremely requiſite. If the adheſion was confined to the *placenta* only, the motion, or *conatus* to motion, of the whole maſs of the *fœtus* and membranes, would act with the advantage of a ſtrong lever, on that one fixed part, where ſuch adheſion was; and, of courſe, eaſily and frequently overcome it. Whereas, the ſlighteſt hold in the other parts, particularly the moſt oppoſite, would prevent this conſequence. It is certainly to be thence concluded, that, as this globular maſs, the lubricous ſurface of which is oppoſed to the lubricous ſurface of the *uterus*, does not always, in conſequence of any concuſſion or ſtrong motion, act on the adheſion of the *placenta* ſo as to deſtroy it, the effect is checked, and prevented by

by an auxiliary adheſion of the other parts of their ſurfaces to each other.

The ſlighter hœmorrhages, which are ſometimes ſeen in pregnancies; and which either ceaſe, or continue without miſcarriage, or any other ill conſequence; make for this opinion. As they are eaſily accountable for, from a laceration of ſome part of the *chorion* from the *uterus*; where the union being made, by a much leſs number of veſſels than that of the *placenta*, the diſcharge muſt be in proportion leſs, as well as the tendency to a further laceration, by ſetting the whole maſs looſe; which muſt attend the ſeparation of any part of the *placenta*.

It may, therefore, be juſtly concluded from theſe reaſons, that there is an adheſion, as well of the *chorion* as *placenta*, to every part of the *uterus*, which comes in contact with them: though much leſs in the *chorion*, than in the *placenta*; in proportion, as the knotty complications of blood veſſels abound leſs in it. Obſervations made by perſons of moſt conſummate judgment in matters of this kind, alſo on the rough and uneven ſurfaces of the membranes, and *uterus*, in proportion to the differences ſtated to be betwixt the *placenta* and *chorion*, when examined immediately after delivery, confirm this opinion.

SECT.

SECT. III.

Of the natural reverſed poſition of the child in the uterus; *and the error of the ſuppoſed* culbute, *or turning before delivery: in order to account for the head's being generally downwards at that time.*

DR. ASTRUC, in *book* I. *chapter* III. *article* III. of this work, ſays, "The *fœtus*, contained "in the after-birth, where it ſwims in the water "of the *amnion*, is always placed with the head "higheſt; and, in this poſition, it is conſtantly "found, when women are opened, who die in "their pregnancy." He proceeds then to account mechanically for this, from the difference of the ſpecific, and real gravities, of the head, and the lower parts. In the *fifth chapter* of the *firſt book*, he ſays, "That this poſition, ſo uſe-"ful during pregnancy, is not equally advan-"tageous for delivery. To make a proper diſ-"poſition for which, it is neceſſary that the "child, when the time approaches, ſhould then, "by an admirable mechaniſm, change it." After enumerating ſeveral reaſons why this muſt happen, he ſays below, "All theſe cauſes, "which are combined at the time of pregnancy, "make the upper parts of the child weigh "more, at that time, than the lower: and they "muſt, therefore, by the invariable laws of "gravity, ſink, and make the lower parts riſe; "and intirely change the poſture of the child. "This TURNING, or, as it is called in French, "the *culbute* of the child, ſhews the approach of "labour: and precedes it a greater or leſſer

"num-

"number of days, according as the progreſ-
"ſions of the child are more or leſs quick."

This notion of the original poſition of the child, with the head uppermoſt, and of the *culbute*, or turning, preparatory to delivery, is not peculiar to Dr. Aſtruc: but was the general opinion of the former writers; till lately, that it has been queſtioned. As may be ſeen in Mauriceau, Le Motte, Sympſon, and even Dr. Exton, in his work, publiſhed ſo late as 1753.

From this ſuppoſition, with reſpect to the original poſture of the child, and the conſequential *culbute*, Dr. Aſtruc deduces all the accidents regarding the other poſitions, in which the child is ſometimes found: and, ſubſequently, a conſiderable part of thoſe, which occaſion difficult labour.

The fact, of the upright poſition of the head of the child being its natural, and general, ſtate in the *uterus*, is not true; nor, conſequently, is that of the *culbute*: and all the reaſonings on the accidents deduced from it, are erroneous; as they muſt neceſſarily depend on the fact itſelf.

It is, indeed, much to be wondered at, how this notion ever prevailed ſo generally and ſtrongly: as it ſeems to have no foundation, but in the previous opinion, which might ariſe without examination, that it was the moſt natural ſtate of a living creature to have its head uppermoſt. Due obſervation muſt, however, notwithſtanding the miſtaken aſſertion of the writers, who have ſaid the contrary, have at all times ſhewn the error of it: and it muſt have been owing to a neglect of examination, or a deſire to ſupport a particular doctrine, at the expence of truth, that this opinion has been maintained.

It is well known, that when abortions happen, either in the earlier or later periods of pregnancy, the head is moſt generally found to preſent itſelf; and the delivery is made that way: and this as frequently occurs in ſuch labours, as at the full time.

In the examinations, by the touch, it is the head, and not the breech or feet, that is commonly felt through the ſubſtance of the *vagina* and *uterus*, at the bottom of the *pelvis* betwixt the *os internum* and *pubes*; where it is diſtinguiſhable by its firm, round, continued form. But this is yet more certainly perceivable, in the examinations made through the *rectum*; by which method the head is more palpably felt.

Diſſections have ſhewn the ſame, unleſs in extraordinary caſes; and many preparations could be now produced, exhibiting embryos, and fœtuſſes, in all the ſtages of pregnancy, in this ſituation. In the unborn ſtate, it is indifferent to the eaſe or preſervation of the child, as far as appears, whether the head or feet be upwards. But as to delivery, it is of the utmoſt conſequence that the head ſhould be downwards: and, therefore, it was ſo inſtituted by nature: and, indeed, might have been thence preſumed, as far as reaſons *a priori* of this kind ought to weigh; even if no obſervations had been made of it.

The exploding this error may be of ſome conſequence to practice; as the concluſions from it might lead into a falſe prognoſtic. For if, on examination, by the touch, the head had been found downwards in the earlier or middle periods of pregnancy, as of courſe it will in general be, it might have been imagined, by thoſe who held the belief of the *culbute*, that this had happened pre-

prematurely from ſome accident; and that bad conſequences were to be expected from it. Whereas, the finding this to be the poſition of the child, on ſuch examination, admits of no other inference, than that the delivery will be in the moſt natural, and, conſequently, ſafe and eaſy way; if no accident diſplace the child afterwards.

SECT. IV.

Obſervations on the means, by which the fœtus *receives its nouriſhment; and on the queſtion, Whether there be any communication of blood betwixt the mother and the* fœtus.

Dr. Astruc has, in this work, as well as in his others, adopted the doctrine of *the communication of blood from the mother to the fœtus*, in order to its nutritive ſupport: and made it the foundation of ſeveral reaſonings which reſpected the practice in very eſſential points. He does not, indeed, reſt the whole of the nutrition on the transfuſed blood, as many other writers before him have done: but makes it conſiſt partly in that, and partly in an uterine milk; for the ſecretion of which milk he alledges, there is a particular *apparatus* in the *uterus*, correſpondent to that in the breaſts: and he has undertaken ſubſequently to deſcribe, and even delineate, in prints, the reſpective conformation of the parts. The detail of his theory, regarding the *colatura lacteæ*, and the manner of its application, to the purpoſe of nouriſhing the *fœtus*, are not introduced into this work; but are given at large in his *treatiſe on the diſeaſes of women*. He proceeds, however, here, referring

to his ſyſtem there given, on the ſame ſuppoſition of a continued communication of the blood veſſels of the mother, the *placenta*, and the *fœtus*, ſo as to convey the blood of each reciprocally to the other; and of the conſequential effects of ſuch a mutual communication; as *data*, from which he deduces the reaſons of ſeveral material points of practice, and prognoſtication. As the making a double ligature of the umbilical cord: the neceſſity of a violent ſeparation and delivery of the *placenta*, when it does not attend, or immediately follow, that of the child: the production of moles, by the growth of the *placenta*, after the *embryo* is deſtroyed: and many other ſuch rules and doctrines. Without enlarging on the more minute circumſtances, he has, nevertheleſs, occaſionally diſplayed, even here, his general ſentiments on this head: particularly in explaining the *lochia*, he ſays, "they come from two ſorts of veſſels. "The one is the *cæcal* veins, or veinous *appen-* "*dices*, which, during the pregnancy, end in "the *cellulæ* of the *placenta*; and there depoſit "*the blood neceſſary for the nouriſhment of the* "FOETUS: but which, after the delivery, flows "into the cavity of the *uterus*. The other is, "the *lactiferous veſſels*, which conveyed, during "the pregnancy, into the *cellulæ* of the *placen-* "*ta*, *a milk intended to nouriſh the* FOETUS: but "which, after the delivery, ſuffer it to run in- "to the *uterus* itſelf." This is a ſketch of his theory: which is very explicitly unfolded in the beginning of the firſt and fifth volumes of his *diſeaſes of women*.

With relation to the transfuſion of blood from the mother to the *fœtus*, for its nouriſhment;

ment; and the communication of the blood veſſels of the *uterus* with thoſe of the umbilical cord, for that purpoſe, the greateſt part of the writers on this ſubject have maintained them: and even moſt of the lateſt, who have treated of midwifery, or the anatomy of the parts of generation, have either conſidered them as uncontrovertible, or, at leaſt, dubious.

Dr. Exton, whom I mention as one of the lateſt Engliſh writers, ſays, "the impregnated *ovum*, "being as it were ingrafted to the *fundus*, the "fibres of each inoſculate with one another; "from whence there is formed a large *plexus* "of blood veſſels, to maintain the circulation "between the mother and the child." Dr. Smellie, indeed, takes notice of the doubts that have ariſen, with reſpect to this matter: and, after having produced ſome very good reaſons, and clear facts, againſt the opinion of a communication of blood betwixt the mother and the *fœtus*, leaves the point undecided: even ſuggeſting ſome difficulties, on which he lays a ſtreſs; that, nevertheleſs, have no real weight, when duly conſidered.

There is not, however, in the whole extent of phyſiology, any one opinion, which can be ſupported with a greater multiplicity of juſt and concluſive reaſons, than the poſition, *that there is really no transfuſion of blood from the mother the child:* but *that the child is nouriſhed by a milky*, or *by a lymphous humour*, prepared, moſt probably, partly by the *uterus*; and abſorbed by the veſſels of the umbilical cord in the *placenta* and *chorion*, where it is ſeparated from the blood, which paſſes from the *uterus* into the *placenta*, by another proper ſyſtem of veſ-

ſels. It is eaſy, nevertheleſs, to account for the origin, and general reception, of this notion of a ſanguinary communication betwixt the mother and *fœtus:* as it would be the natural reſult of a groſſer and leſs accurate obſervation on the parts, and their ſeeming functions. Whoever found the *placenta* adhering to the *uterus* in ſuch manner, that an hœmorrhage always followed the violent ſeparation of them; and, moreover, that the umbilical cord, which conjoined the *placenta* with the *fœtus*, contained two arteries and a vein; would, of courſe, while the obſervation confined itſelf ſolely to theſe facts, infer, there was ſuch a communication betwixt the blood veſſels of the mother and *fœtus*; and that the final cauſe of this conformation was, the nutrition of the child by the blood of the mother. Cloſer obſervations, and more mature reflections, nevertheleſs, on the ſtructure of the parts, their offices, and attendant accidents, eſpecially, together with an analogical view of the common œconomy of nature, in the generation of other animals, and ſubſervient conformation of their parts, would ſoon furniſh the cleareſt reaſon for rejecting that *hypotheſis*; and concluding, that the uterine and placentary *apparatus* was not intended to convey blood to the *fœtus*; but to ſecrete, and carry to it, a proper nutritive, lymphous, or milky fluid, from whence it might originally form its own blood, by the powers of its own ſyſtem. Accordingly ſome few authors, in the later times, and particularly Ruyſch, have denied the communication of the mother's blood to the *fœtus:* and the Faculty of Medicine at Paris, on a *theſis* maintained by M. An-

M. Anthony Juſſieu, in conſequence of experiments purpoſely made, decided againſt that notion. It muſt be allowed, however, that Ruyſch founded his aſſertion on an erroneous *poſtulatum*: which was, that no blood paſſed from the mother into the *placenta*; the contrary of which is now evident from injections: and that the faculty of Paris, grounded their determination on the reſult of experiments made on bitches: which Dr. Aſtruc does not allow as concluſive: alledging a variation in the conſtructure and functions of theſe parts of quadrupeds, from thoſe of women. Roederer, Iſaiah Judas, and ſeveral other of the later Germans, have, on much better principles, attempted to ſhew, from the appearances of the parts when injected, and from other phyſiological obſervations, that there is no transfuſion of blood from the mother to the child, nor communication of blood from the uterine to the umbilical veſſels. The clearing up of this point is of great conſequence to the eſtabliſhing the principles of a more juſt and ſucceſsful courſe of practiſe, than has been, in general, hitherto perſued: as the erroneous deductions from falſe notions concerning it, have been one great cauſe of the almoſt conſtant intermeddling with, and perverting, the due and regular proceſs of nature in parturition. This holds good particularly with relation to the premature and violent delivery, as well of the *placenta* as child: by which, midwives, and indeed *accoucheurs*, excepting only ſome few of the more enlightened, have, perhaps, deſtroyed more women, than ever were ſaved by all the aid of the obſtetric art.

In order to inveſtigate, more clearly, the reaſons for believing, that there is not any tranſfuſion of blood from the mother to the child; but that the child is nouriſhed from a proper ſucculent juice, abſorbed by the umbilical veſſels in the *placenta* and *chorion*, and converted to blood by its own ſanguifactive ſyſtem; it is neceſſary to premiſe an explanation of, and remarks on, ſome particulars in the ſtructure, and appearances of the *uterus*, as well as of the *placenta*, *chorion*, and *umbilical cord*.

The body, or principal ſubſtance, of the *uterus*, contained betwixt the interior and exterior membranous coats, is formed of a great number of blood veſſels, and lymphatics, diſpoſed in plexuſſes and convolutions; which, in pregnancy, enlarge, ſo as to aſſume a kind of ſpongy texture, and give the whole extended *parietes* of the *uterus* at leaſt as great a thickneſs, as it has in its moſt contracted ſtate. Theſe plexuſſes form knots, that make, where they happen to be copiouſly and ſuperficially ſituate, inequalities on its inner ſurface: and they have mouths and openings, which are diſtinguiſhable on occular examination, during the *menſes*, and ſome days after their ceſſation, where there is an opportunity of inſpecting the diſſected *uterus* of a woman, who died under thoſe circumſtances. Theſe knots of veſſels, with their mouths, were called *cotyledones* by the antients: and Dr. Aſtruc, with ſome others, ſay, that veinous *appendices*, or cœcal portions of veins, projecting from them, inſert themſelves into the *placenta* in pregnancy; and form the connection of the *uterus* with the *placenta*, as well as the communication betwixt them, for conveying the blood,

or

or nutritive juice, for the nouriſhment of the *fœtus*. The appearance of ſuch projecting veinous *appendices* in the uteruſſes of ſeveral quadrupeds after delivery, where they ſeem as if unſheathed from correſpondent cavities in the *placenta*; and of the ſame in women, under ſimilar circumſtances, according to the concurring obſervations of ſeveral able anatomiſts; give a countenance to this notion of ſuch a manner of union betwixt the *uterus* and *placenta*. But it is evident, nevertheleſs, this is not the fact, or at leaſt not the whole. For injections demonſtrate, that the *uterus* ſends up a great number of veſſels, as well arteries as veins, into the cellular or ſpongy ſubſtance of the *placenta*; and which, indeed, form a great part of it: and the blood veſſels of other parts, are known to be capable of uniting with the *placenta*, with the ſame nutritive effect as the uterine.

The *uterus*, therefore, appears, as well from its conformation in its ordinary and gravid ſtates, as from its natural and morbid accidents, to have, and be adapted to, other offices in *utero*-geſtation, than merely thoſe of containing the child during pregnancy, or ſimply communicating its blood to the *placenta*. The particular enlargement of its pulpous ſubſtance in a gravid ſtate:—the great number of blood veſſels, with their convolutions, or plexuſſes, and *colytedones*, on its interior ſurface:—the occaſional diſcharge of the true or milky *fluor albus*, and *lochia*:—and the extraordinary tendency from diſeaſe or hurt to a cancerous ſtate; all evince the *uterus* to be conſtituted and formed in a different manner from membranes, ſimply intended to contain and defend any included

part;

part; or ſimply to continue the *rivus* of blood to and from it. For, certainly, theſe ſeveral particulars of ſtructure, and effect, infer a glandular *apparatus*, and ſecretive office: and point out, moreover, that this ſecretive office is not confined to a menſtrual diſcharge of blood, nor to the production of *mucus* for lubricating the ſurface of the *uterus*; but that it is ſubſervient to the ſeparation, or preparatory proceſs to ſeparation, of ſome peculiar humour; moſt probably, as well from ſeveral appearances, as its uſe, of a milky fluid; ſuch as is ſecreted, for the ſame general purpoſe, in the breaſts. This is corroborated by the ſimilarity of conformation betwixt the ſubſtance of the *uterus*, and that of the breaſts, from which it varies only in being leſs compact.

This peculiar conformation of the *uterus*, may be therefore reaſonably deemed to be ſubſervient to the purpoſes of *utero*-geſtation, with reſpect to the nutrition of the child: but it muſt nevertheleſs be admitted to be ſo, only for the more *facile*, *effectual*, and *certain performance* of that intention; and not as *abſolutely eſſential* to it. For the pregnancies, which have gone forwards, even almoſt to the final period, in the *ovaria*, *Fallopian tubes*, and even the cavity of the *abdomen*, where ſuch peculiar conformation is wholly wanting, ſhew demonſtrably, that nature can diſpenſe with the want of it; and convert the ordinary form and ſtate of the blood veſſels, of the parts contiguous to the *ovum*, wherever it lodges, to ſuch, as enable them to execute, ſubſtitutively, the office of the *uterus*, with reſpect to the furniſhing nutrition to the child. The particular conſtruction of the

uterus

uterus is, therefore, with reſpect to the nutritive function, not a *ſine qua non* to conception, and pregnancy; but only conducive to it.

The *placenta* is of a ſpongy cellular texture, and formed of an extreme number of capillary blood veſſels, greatly plicated and winding: but among them are ſome larger branches of arteries and veins. Theſe blood veſſels may be deemed, as belonging to two different ſyſtems. In the one, they ariſe from, *or* communicate with, thoſe of the *uterus* of the mother: In the other, they ariſe from, *and* communicate with, the proper ſanguinary ſyſtem of the *fœtus*: being ramifications of the two arteries and vein, that paſs from the child to the *placenta*, forming, in their tranſit, the umbilical cord. It is certain, the cellular or ſpongy ſubſtance of the *placenta*, is moſtly compoſed of capillary veſſels, which take their riſe from, or at leaſt inoſculate with, thoſe of the *uterus*. This is evident from injections, which paſs from the uterine veſſels into theſe; but never into the ramifications, nor larger trunks, of the umbilical veſſels. Among the cellular veſſels of the *placenta*, nevertheleſs, the ramifications of the umbilical arteries and vein, in numerous convolutions of capillary diviſions, are diſtributed: but without ſuch inoſculation, or communication, as to receive the red blood. Though, unqueſtionably, they do receive ſome other juice, or humour, for the nutrition of the child: as no other uſe can be aſcribed to this conformation; and there is no other means for the conveying ſuch nutrition; except we ſuppoſe it abſorbed, by the body of the child, from the fluid in the *amnion*. It was, indeed,

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a former notion with ſome, that the *fœtus* was nouriſhed by the mouth from the humours in the *amnion:* but the perfect growth of fœtuſſes, which have had no mouth, nor even deſcribed form of head, evinces that they are not nouriſhed by that paſſage; and experiments ſhew, that the humour of the *amnion* is not of a nutritive nature: being only aqueous, with a ſlight proportion of ſaline and mucilaginous matter; and neither coagulating, like milk, with acids; nor concreting, like *ſerum*, with heat, or the addition of alcohol.

This cellular texture of the *placenta*, with the abundance, and the plicated, and knotty ſtate of its blood veſſels, muſt, undoubtedly, infer ſome particular function, or uſe, with reſpect to the nutrition of the child: which function might, from this very circumſtance of ſo complex a diſpoſition of the veſſels, be juſtly concluded, not to be that of ſimply conveying the blood from the mother to the child: ſince a meer union, or inoſculation, of a much leſs number of veſſels of the one, with thoſe of the other, would be ſufficient for that purpoſe. It is, nevertheleſs, certain, that there is an adheſion at leaſt of the *placenta*, to the interior ſurface of the *uterus:* and it is equally certain, from the above-mentioned fact of injections, that this adheſion is conſtituted, by veſſels, which actually convey blood from the *uterus* into the *placenta*; and, after it has anſwered the intended purpoſe of its preſence, carry it back again into the *uterus*. This is ſaid, by Dr. Aſtruc, and ſome others, to be performed by a projection of the *cotyledones*, or, as he has called them, *veinous appendices* of the

uterus,

uterus, into the *cellulæ* of the *placenta*. Somewhat like this does, indeed, as has been above obſerved, appear in the uteruſſes of ſeveral quadrupeds, after the delivery of their young: projecting portions of veins, ſeemingly unſheathed from correſpondent cavities in the *placenta*, being to be ſeen on the ſurface of the *uterus*: and, moreover, many able anatomiſts, whoſe veracity ſtands in the faireſt light, have aſſerted, they have obſerved ſuch veinous *appendices* projecting from the uteruſſes of women, diſſected when they have been far advanced in pregnancy. However, not only the appearance of the cellular veſſels, in an injected *placenta*, evidently ſhew this, as above mentioned, not to be the whole; but the growth of fœtuſſes in the præternatural conceptions out of the *uterus*, in parts where no ſuch veinous *appendices* can be ſuppoſed, evince it. In whatever manner the union of the *placenta* and *uterus* be made, no doubt can be admitted, but that it is the means of communicating the nutrition furniſhed by the mother to the child; ſince there is no other continuity of veſſels of the one to the other. And the peculiar conformation and action of the parts of the *placenta* are *eſſential*, and not *conducive only*, as thoſe of the *uterus*, to this purpoſe: ſince the power which the *placenta* has, to unite with any other accidentally contiguous parts of the mother, as well as the *uterus*, by inſerting its own veſſels in them, or receiving theirs into its *cellular* ſubſtance, reſides in itſelf; and not in thoſe parts, which have nothing relatively peculiar in them.

We ſee alſo, in the umbilical cord, two arteries, paſſing from the navel of the *fœtus* to the

the *placenta*, to convey a copious quantity of blood into the before-mentioned capillary ramifications, which are diſtributed among thoſe veſſels of the cellular ſubſtance of the *placenta*, that communicate with the veſſels of the *uterus*: and a vein, of more than proportionable diameter, going from the *placenta* to the *fœtus*, to carry back the blood. Theſe arteries, and vein, which paſs to and from the *placenta* and *fœtus*, are veſſels of a conſiderable magnitude; far larger than would be neceſſary for conveying ſo much blood, as is required for the nouriſhment of the *placenta* and membranes themſelves. Whence, therefore, muſt be inferred ſome further office, to the performance of which ſo great a *rivus* of blood is eſſential: though this office is not, as we ſhall ſee, that of conveying it from and to the mother. The very great length of the umbilical cord, extended ſo much beyond what is demanded for the commodious attachment of the child to the *placenta*, as to occaſion, in many caſes, very injurious and fatal accidents, has undoubtedly its uſe likewiſe: as has, alſo, the peculiar ſpiral entwinement of the two arteries round the vein, in their progreſs through the cord.

The exiſtence of an uterine, or placentary milk, is doubted by many; as it is not, by diſſection, commonly found in the human ſubject in a ſeparated ſtate, either in the *uterus* or *placenta*: but ſtrongly aſſerted by others; in conſequence of very juſt concluſions from leading facts. The diſcharge of a milky humour in the true *fluor albus*; in the *profluvia* which happen during pregnancy in ſome women, who, from the effect of concuſſions of the *uterus*, have had

profuſe

profuſe evacuations of this kind, weakening the child and themſelves; and in the *lochia*; unqueſtionably ſhew, that ſuch an humour is peculiarly abundant, and ſeparable in the uterine and placentary parts.

The certainty, that ſome fluid is abſorbed by the umbilical veſſels, for the nutrition of the *fœtus*; and the ſeeming inſufficiency of meer *ſerum*, or lymph, for that purpoſe; together with the analogical reaſons derived from the caſe of other, as well viparous as oviparous, animals, in which we ſee nature has found the *ſerum* inadequate; concur with theſe appearances, to give room to preſume, that the nutritive humour, imbibed by the umbilical veſſels, is not ſimply *ſerum*, or lymph, but partakes of a more milky and oily nature: and, conſequently, that ſuch a milky humour does ſubſiſt in theſe parts.

It appears, from theſe ſeveral premiſes, that the *uterus* has a peculiar conformation; in conſequence of which it conjoins itſelf with the *placenta* and *chorion* in conception, and the progreſs of pregnancy, by ſending up blood veſſels into their cellular ſubſtance; which there form an extreme great number of winding ramifications; as the injections made into them from the veſſels of the *uterus* evidently prove: and, alſo, that this conformation, together with other appearances, ſuggeſts a further uſe of the *uterus*, than that of merely containing the *fœtus* and membranes; or the furniſhing them with blood. It appears, that there is a peculiar conformation, alſo, in the *placenta*, *chorion*, and umbilical cord; the obvious intention of which, is to receive, ſeparate, and convey, in a proper ſtate, to the *fœtus*, the nutrition, which is brought into the cel-

cellular ſubſtance of the *placenta* and *chorion*, by the veins of the *uterus*. But here the definitive queſtion ariſes: Whether that nutrition be the blood itſelf of the mother; ſome ſecreted, milky, or lymphous humour; or both the blood and ſuch humours conjunctively.

Dr. Aſtruc, as has been obſerved above, eſpouſes the laſt of theſe ſuppoſitions: and, after giving the moſt ſatisfactory proof, that there is a nutritive humour, *not blood*, furniſhed to the child; preſumes, with very little reaſon, or rather againſt apparent facts, that *blood* alſo is communicated to it from the mother.

It is proper, therefore, firſt to ſhew, that ſome other humour is neceſſarily ſupplied to the *fœtus* by the mother: and afterwards, that no blood is conveyed to it from her.

The peculiar ſtructure of the *uterus*, with reſpect to the *cotyledones* or knotty plexuſſes; and the actual preſence of a peculiar milky fluid, apparent in women, as has been mentioned, in the true *fluor albus* and the *lochia*; argue, that ſome intention is effected there, which is ſubſervient to the ſeparation of ſuch an humour in the *placenta*. Though it muſt be admitted, that the actual ſeparation of it, for the nutrition of the *fœtus*, is made in the *placenta* itſelf. As well becauſe the blood itſelf is demonſtrably carried thither from the *uterus*; as that the child can be nouriſhed without the uterine *apparatus*: which, according to what has been above advanced, is evident in the inſtances of the conceptions, in the *ovaria*, Fallopian tubes, or cavity of the *abdomen*, where the common blood veſſels of thoſe parts ſupply the nutrition, by their inoſculation with the *placenta*.

placenta. But the office of the *uterus*, nevertheleſs, with reſpect to any ſecretive purpoſe ſubſervient to the nutrition of the *fœtus*, is, therefore, only auxiliary, and not abſolutely eſſential, as was alſo above remarked. It ſeems, on the whole, to be that of rendering the blood more redundant in milk, or chylous juice; ſince in particular ſtates, as well out of the time of, as in, pregnancy, and after delivery, ſuch an humour actually ſeparates from the blood; and eſcapes through the veſſels: which certainly ſhews there a greater redundance, and tendency of it to ſeparate, than is found in other parts. Moſt probably this diſcharge is made, out of the time of pregnancy, by the mouths of the *cotyledones*, or *veinous orifices*, when neither wholly cloſed, nor yet open enough to admit the red blood to paſs; as it is known that the blood in the *menſes*, is evacuated by theſe mouths; and the menſtrual diſcharge frequently degenerates into this milky one; which indicates the *profluvium* of both to be from the ſame orifices. After delivery, a like ſucceſſion of milky humour ſucceeds the flooding of blood, which flows then from the ruptured veſſels of the *uterus*, that paſſed into the *placenta*: which evinces the abundance of ſuch a chylous humour in the veſſels of the *uterus*, and its diſpoſition to ſeparate from the blood. Whence it may be juſtly inferred, that there are various degrees of aperture or cloſeneſs in the mouths of the *cotyledones*, from the greateſt, in which the red blood eſcapes in the *menſes*, to an entire conſtricture, which occaſion the change in the diſcharge: and the ſame, in the ruptured veſſels after delivery. As we then ſee in the *lochia*, at firſt, the

red blood eſcapes; afterwards, a milky humour; and, at laſt, a thin *ſerum*; in proportion as the orifices of the ruptured veſſels contract and grow cloſer. And, moreover, the ſame ſucceſſive changes of the diſcharge, is not unuſual in the coming on, as well as ceſſation, of the *menſes*, in women who are ſubject to the milky *fluor albus*: and where the *uterus* is large, and the *menſes* go off ſlowly, and leave ſome lymphous or milky diſcharge, the mouths of the *cotyledones* are viſible for ſeveral days after their ceſſation.

The office of the *placenta* being, as above ſtated, to receive nutrition; and that nutrition being conveyed to it in the form of blood, though, moſt probably, of blood particularly replete with chyle, from the operation of the *uterus* on it, as above mentioned; its conformation will accordingly appear to be ſuch, as is adapted to the ſeparation of the proper nutritive humour, from the blood depoſited in its *cellular* veſſels: and to the commixture of it duly, with part of the blood of the *fœtus*, before it be carried into the proper ſanguinary ſyſtem of the *fœtus*; that is, into the veſſels of its body. The particular conſtruction, and mode of operation, by which the veſſels of the *placenta* electively, as it were, abſorb the chylous or lymphous humour, and refuſe the red blood, is not to be explained; and muſt remain in the ſame obſcurity, as thoſe of every other glandular ſecretion. But that nature does effect ſuch a ſeparation of milk from blood in the animal œconomy, is evident by the inſtance of the breaſts: and we may, with great reaſon, ſuppoſe it to be performed here on analogous prin-

principles: and that there are veſſels intermixed with the veins and arteries in the knots or plexuſſes of the *placenta*, which abſorb the milk from the red blood, in the ſame manner as the lactiferous veſſels in the breaſts: and convey it into the capillary ramifications of the veſſels of the umbilical cord.

Admitting, for the above reaſons, the nutritive matter, received by the umbilical blood veſſels of the *placenta* from its cellular veſſels, to be of a milky nature, ſuch as requires a gradual mixture with the blood of the chyle, by mechanical action, ſimilarly to what is performed in the lungs after birth: the general conformation of the *placenta*, and umbilical cord, will clearly correſpond with that office. The great quantity of blood carried from the *fœtus* into the *placenta* will appear neceſſary, in order that the milk ſhould be blended and united with a due proportion before it enters the proper ſyſtem of the *fœtus*. The great number of blood veſſels, diffuſed through the whole ſubſtance, and particularly in the knots, and plexuſſes, in which the arteries are brought in contact with the veins, conduce highly, by the oſcillatory motion of the arteries, to ſuch commixture. The great, and otherwiſe frequently incommodious length of the umbilical cord, has the ſame effect: the ſpiral entwinement of the two arteries round the vein, acting on the fluid contained in it, by their pulſative motion, for ſo great an extenſion of the canal, contributes much, likewiſe, to the intimate commixture. That ſuch a function was neceſſary, allowing the nutritive fluid to be of a chylous nature; and conſequently, that there ſhould be an appoſite con-

firmation, is evident from the œconomy of the child after birth, with relation to the incorporation of the chyle and blood. We ſee there, when the chyle is to be brought from the inteſtines into the ſanguinary ſyſtem, that the *foramen ovale* in the heart, through which the blood paſſed before the birth, is cloſed; and the venal blood, together with the chyle, having entered into the heart, is determined into the lungs, before impervious to it, where the diffuſion of blood-veſſels, and their entwinement round the *veſſiculæ* of the ramified *trachea*, ſubject it to the reſpiratory action, and effect the due commixture. This intention, the *placenta* and umbilical cord, in conſequence of the conformation we have obſerved, effect likewiſe, in a manner ſuitable to the *fœtus:* and they may, therefore, be properly conſidered as performing the office of lungs in the child, as well as that of a lacteal, or chyliferous ſyſtem.

This uſe of the *placenta*, and umbilical cord, is a preſumption, that can ſcarcely be diſallowed, if it be admitted, that a ſecreted humour, and not the blood itſelf, is received into the veſſels of the umbilical cord, from the cellular veſſels of the *placenta*; where, as we before obſerved, the uterine blood is depoſited. And, from this apparent uſe of the conformation, ariſes a ſtrong argument *a priori* in favour of the notion, that ſuch a ſecreted humour only, and not the blood, is conveyed to the child for its nutrition. But, as this is the great point in queſtion, it ſhould be proved, by an actual demonſtration from facts, that there is no communication of blood from the mother to the child, or the child to the mother.

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In order to that, I ſhall here only have recourſe to three leading facts, though I ſhall below corroborate them by reaſonings from analogy of the general œconomy of nature; and an elucidation of the difficulties that have been made to this doctrine. The firſt fact is, that no injections, of the veſſels of the *uterus*, paſs further than thoſe of the cellular ſubſtance of the *placenta:* nor, on the other hand, do injections in the veſſels of the umbilical cord paſs into thoſe, which receive them from the *uterus*, but are confined to their own ramifications: whereas, were there a communication of red blood betwixt the arteries and veins of the *placenta*, which ariſe from the umbilical cord, with thoſe which ariſe from the *uterus*, there would be a correſpondent reciprocal transfuſion of the injection; which is not the caſe. The ſecond fact is, that, after delivery, tho' the *placenta* be left adhering to the *uterus*, and the umbilical cord be divided, the hœmorrhage, from the end of that part of the cord, which remains appendent to the *placenta*, ſoon ceaſes: being, as obſervations ſhew, limited to the quantity of blood only, which was in it at the time of the cord's being cut: and the *placenta* itſelf grows flaccid, and diminiſhes in its bulk. Whereas, if the uterine blood did actually paſs, from the cellular veſſels of the *placenta*, into thoſe of the umbilical cord, the hœmorrhage muſt continue, and would be in proportion to the quantity of blood ſo paſſing: and the *placenta* itſelf would retain its conſiſtence and vollume: there being no change made, in the *placenta*, by the cutting the cord, at a conſiderable diſtance from it, that could ſtop the progreſs of the uterine blood into its veſſels, if

it did at all paſs thither, nor the conſequential flux by the cord: and the collapſed, flaccid ſtate of the *placenta*, after the diſcharge of the blood, ſhews, the ceſſation of the efflux is not owing to any obſtruction in the cord itſelf, but to the want of freſh blood paſſing into the *placenta*.

The third fact is, that if the *fœtus* and membranes be delivered together; and the *placenta* before the *fœtus* breath, and the umbilical cord be cut, be put into a large baſon of warm water, the pulſation of the arteries may be ſtrongly felt; and, if a large branch of a vein, near the inſertion of the cord, be compreſſed by the finger, the inferior part of ſuch vein will grow turgid: yet, at the ſame time, no hœmorrhage or diſcharge of blood is made from the ſurface of the *placenta*. But this diſcharge muſt neceſſarily happen from the ends of the veſſels divided in the ſeparation of it from the *uterus*, if there were any communication of blood betwixt them, and the umbilical veſſels, in which the circulation is at that time ſo ſtrong: as the correſpondent ends of the ſame divided veſſels, in the *uterus*, are at that time actually in a diſcharging ſtate. This muſt, however, be taken with the limitation, that no part of the ſurface of the *placenta* be wounded or lacerated, ſo that any other ſolution of continuity be made, than what properly happens in the natural ſeparation of the membranes from the *uterus*. For if any of the ramifications of the umbilical veſſels be divided by ſuch means, they will of courſe bleed, in theſe circumſtances.

From the firſt of theſe facts, it is ſufficiently evident, that the greateſt part of the veſſels of which

which the cellular ſubſtance of the *placenta* is compoſed, take their riſe from the *uterus:* and that there is no communication betwixt them, and the ramifications of the umbilical veſſels, by which red blood can be conveyed: as the injections thrown into either the uterine or umbilical ſyſtem, confine themſelves to each ſuch reſpective ſyſtem; and do not paſs into the other.

This is ſtrongly confirmed by the ſecond fact. For, if the blood paſſed from the uterine veſſels into thoſe of the cord, the hœmorrhage would continue neceſſarily, if the cord were cut, while the *placenta* remained unſeparated from the *uterus:* as Dr. Aſtruc, and others, from ignorance of the contrary, believed it would.

The third fact further demonſtrates, that the umbilical veſſels in the *placenta* do not communicate with the uterine veſſels of it. For the latter, being divided by the ſeparation of the *placenta* from the *uterus*, muſt, in ſuch caſe, ſuffer an efflux of blood, while the circulation was continued in its full force in the others, did they ſo communicate with them.

Theſe facts, therefore, taken together, afford the moſt ſatisfactory and concluſive proof, that there is no communication of blood from the mother, or *fœtus* to each other: and obſervations on accidents attending pregnancy, as well in the caſe of women, as quadrupeds, are intirely correſpondent, to this principle. In the experiment on bitches, intimated above, which determined the faculty of medicine at Paris to decide againſt the communication of blood from the mother to the *fœtus*, the bitches which had been bled to death, when they were far advanced in their pregnancy, were found half an

hour after, to have their whelp-fœtuſſes in full health, and vigour, without the leaſt appearance of any loſs of their blood: and the ſame has been found in the caſe of women, who have died from violent floodings.

Dr. Aſtruc, from the conſequences of this fact, and other irrefragable arguments gives up the point with relation to quadrupeds: but ſays, that the gravid œconomy differs in women from quadrupeds: and argues, as a ground for this ſuppoſition, that female quadrupeds have no menſtrual diſcharge of a bloody nature; and therefore, vary in the uterine œconomy in other reſpects, which lead to this particular alſo. But the fact is not ſtrictly true, that female quadrupeds have no red *menſes*: becauſe, there are frequent inſtances of it in bitches; and that the conformation is the ſame with reſpect to the union of the *uterus*, with the *placenta*, is evident from the fact of injections. For it appears, that the veſſels of the cellular, or ſpongy part of the *placenta* in ſuch quadrupeds, receive injections from thoſe of the *uterus* in the ſame manner; as is found with reſpect to women. It was, indeed, owing to Dr. Aſtruc's general ignorance of, or neglect of conſideration on the effect of injections in the two kinds of veſſels, of which the *placenta* is compoſed, that he was led as well into the firſt error of ſuppoſing an intercourſe of blood betwixt the mother and *fœtus*, in the human kind, as this erroneous defence of it, contrary to the apparent facts obſerved in the caſe of quadrupeds. It is, however, extraordinary, that after ſuch an elaborate attempt to prove, that nature had made ſome other proviſion for the human *fœtus*, beſides the blood of

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the mother, he ſhould ſtill, without any even plauſibility in facts, adhere to the old notion, of a tranſmiſſion of the mother's blood. For it is very much againſt the analogy of nature; and, conſequently, very unphiloſophical; to aſſign two cauſes, where one is fully ſufficient. And, therefore, having admitted, that quadruped fœtuſſes were ſupported by ſome humour, not blood, and that the ſame was prepared for the human *fœtus*; nothing but evident concluſions from palpable facts could warrant the notion, that nature had ſo ſtrangely multiplied her operations, as to ſuperadd blood for its nutrition.

It has been urged as an objection againſt the allegation, that no red blood is conveyed from the mother to the *fœtus*, the difficulty of conceiving how red blood is then firſt produced in it. But in anſwer to this, as we do not know how red blood is at all produced, it is very ſufficient to point out the fact itſelf, in the caſe of oviparous animals, who do produce red blood without any original tranſmiſſion of it to the *embryo:* and this ſhews it, moreover, to be the general analogical proceſs of nature, that the *embryo* ſhould form its own blood.

The doubt which remains leaſt elucidated is, of what preciſe nature, the nutritive fluid is, which the umbilical veſſels receive, from the uterine veſſels in the *placenta*. We have ſhewn, that the ſtrongeſt preſumption lies againſt its being ſimply *ſerum*, or lymph; and for its being of a chylous or lacteous nature: as well from the ſeeming inſufficiency of ſuch lymph for the nutrition of the child, as from the tendency to milky diſcharges from the uterine veſſels, in the true *fluor albus* and *lochia*. The inſufficiency

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of lymph to afford a due nutriment to the *fœtus*, when large, is preſumed from its aqueous nature and deficience of oily parts: and we ſee, in the caſe of oviparous animals, nature has made a conſequential proviſion of oleaginous matter ſuperadded to the lymph. For in their eggs, though the white, which is a ſerous fluid, will produce blood, as it does in the very early ſtate of the *embryo*; yet the yolk is afterwards taken in, and ſupplies what was wanting in the lymph, towards the nouriſhment of the *fœtus* in its more advanced ſtate. The yolk, when examined chemically, appears a concentrated milk. For, on being moderately heated and preſſed, it affords a very great quantity of actual ſubſtantial oil, that from the colour ſeems combined with a conſiderable proportion of bile; which renders it commiſcible, in the way of a lacteous ſolution, with water. The principles of chyle and milk are the ſame with this: being oil united with water or lymph, by means of the bile: and the yolk of the egg may, therefore, be very properly deemed a concentrated milk or chyle. We have great reaſon, therefore, analogically, as well as from the other reaſons, to conclude, that the nutritive fluid, ſeparated in the *placenta* for the ſuſtenance of the *fœtus*, is more replete with oil than the ſimple lymph, or *ſerum*: and conſequently, that it is of a milky nature.

But we ſhall be brought ſtill nearer to this point, as far as analogical reaſons can lead us, if we conſider what appears in the placentary formation of ruminating quadrupeds. In them, the *placenta* is not in one collected body, but divided into a great number of *placentulæ*, or *cotyledones*,

cotyledones, as they are called, adhering independently of each other, to the *uterus*, by their own pedicle. On examining theſe *cotyledones*, there will be found, two different ſubſtances: which, by ſome of the German writers, have been diſtinguiſhed by the names of the MEDULLARY and the CORTICAL; alluſively, for reaſon not very clear, to the two ſubſtances of the brain. The veſſels, that compoſe the *medullary ſubſtance* are productions of, or, at leaſt, communicate with thoſe, which go from the *uterus* into the *cotyledon*: as is evinced by their being filled with injections from the uterine veſſels. The *cortical ſubſtance* is compoſed of ramifications of, or productions from the umbilical veſſels: as is proved, likewiſe, from injections. The cortical ſubſtance lies on the medullary: but does not inoſculate with, or adhere to it, ſo as to make a continuation of the veſſels of the other. For inſtead of admitting of injections being communicable from the one to the other, a ſeparation of the two ſubſtances is made, if greater force be uſed in impelling the injected fluid: and the two ſurfaces then appear, each to have prominences, with correſpondent ſinkings, or concavities in the other; on which concavities, the injection appears to have been depoſited from ſome natural mouths or openings in the reſpective ſurfaces. Both theſe ſubſtances, on being compreſt, *emit freely a milky humour*: whence it is evident, that ſuch a milky humour is ſeparated in the medullary ſubſtance, or, which is leſs probable, carried thither from the *uterus*: and that it is diſcharged by theſe mouths or openings in the ſurface, and abſorbed by the veſſels of the cortical from the openings in its ſurface.

ſurface. That an uterine *diluted* milk is the *pabulum* for the nutrition of the *fœtus* in many viviparous, as a *concentrated* milk is, as was above ſhewn, for oviparous animals, is hence demonſtrable. And it may certainly thence, from the appearance of the ſameneſs of conformation and office in the *placentas* of theſe animals, and that of the human kind, as well as from the other reaſons above advanced, be conjectured with great propriety, that the nutriment of the human *fœtus*, is of a chylous or milky kind.

Of whatever nature, conſidered with relation to chyle, or *ſerum*, the nutriment of the human *fœtus* may be, it muſt, nevertheleſs, be admitted to be very ſufficiently proved, that no part of it is red blood, as Dr. Aſtruc has inculcated; and, conſequently, that all the reaſons for any particular mode of practice, founded on that *poſtulatum*, muſt be given up as inconcluſive.

SECT. V.

Obſervations on moles; and falſe conceptions.

Dr. Astruc, in this work, as well as in his *Treatiſe on the Diſeaſes of Women*, where he gives a theory of them, has diſtinguiſhed *moles* into three kinds.

The firſt, he ſays, is "an after-birth, ſomewhat diſfigured, in which the *placenta* has acquired a great magnitude, and the *fœtus* has died in the early part of the pregnancy. When the *placenta* continues to adhere to the *uterus* after the death of the *fœtus*, and *obtains nouriſhment thence*, it attains a conſiderable bigneſs: and is what ſhould, properly ſpeaking,

" ſpeaking, be called the *mole*." He here ſuppoſes, that after the death of the *fœtus*, the *placenta*, if it happen ſtill to adhere to the *uterus*, may continue to grow; and form a body of conſiderable magnitude: and this he conceives to be the real origin of the firſt or more general kinds of moles. He rejects, with reaſon, the common opinion of falſe conceptions, and ſeems to reſolve the whole into real conceptions accidentally converted into the ſeveral kinds of moles, he ſpeaks of. In the notion, that the *placenta* will continue to grow after the death of the child, and become, in conſequence of ſuch growth a mole, ſometimes of very large magnitude, he has the concurrence of moſt of the writers on this ſubject, who believed, that even a part of the *placenta*, if left behind, would have the ſame effect. But this is, nevertheleſs, a miſtaken notion: there being no ſuch continuance of growth of the whole, or part of the *placenta*, nor even of the adheſion itſelf, but where the *placenta*, or part of it, takes a ſchirrous form, and is rather contracted than augmented. The eſtabliſhers of this error were led into it, by the notion of a communication of blood betwixt the *uterus* and the veſſels of the umbilical cord; as mentioned in the preceding ſection. But after what has been there premiſed, to prove there is no ſuch communication, this deduction from that principle, of courſe muſt be diſcarded. The proper nutrient veſſels of the one part of the *placenta*, take their riſe from thoſe of the cord: and when the circulation ceaſes in that ſyſtem, the dependent nutrition of the part muſt of neceſſity ceaſe, and the part periſh, as any other would, when deprived of nutrition. That

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the *placenta* is compoſed of two diſtinct parts, one of which is formed by a diſtribution of the veſſels of the umbilical cord, is evident from the reaſons before advanced, in the preceding ſection; and is particularly illuſtrated, by the effect of injections thrown into the *cotyledones* of cows, either by the uterine, or umbilical veſſels: when, the injections, inſtead of paſſing from one part to the other, if propelled with ſome force, make a ſeparation of them from each other, without any extravaſation of the injection that ſhows the veſſels to be ruptured. So that it is obvious, the part of the *placenta*, which takes its riſe from the cord, muſt be nouriſhed only by that ſyſtem of veſſels; and cannot grow, or even be preſerved from putrefaction, after the communication with the child is cut off. It is moreover evident, that, beſides the disjunction, which happens by the contraction of the *uterus*, after the birth of the child, and the other previous cauſes of ſeparations before the birth, ſuch efforts for the delivery of the *placenta*, if it remain after the child, are made, as deſtroy the greateſt part of its connection with the *uterus*, where it is not intirely looſened from it: and as, moreover, nature diſcontinues all thoſe operations, which relate to the pregnant œconomy, the communication betwixt the veſſels of the *uterus* and *placenta* ceaſe; and, conſequently, the nutrition of that part of the *placenta*, which takes its riſe from the uterine veſſels. This part, therefore, cannot continue its vital œconomy, under theſe circumſtances, even ſuppoſing it could free itſelf from the other part; which, depending on the umbilical ſyſtem, now deſtroyed, muſt of courſe periſh. That there have been

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ſuch large round fleſh like ſubſtances, as Dr. Aſtruc and others deſcribe, muſt be admitted: but that they do not adhere to the *uterus*, nor grow by a vital circulation, the examination of the more accurate obſervations will manifeſt. The ſuperſtition, ignorance, ſuperficial inſpection, and injudicious experiments, in thoſe concerned in ſuch matters, together with the falſe theory of the communication of blood to the child, have occaſioned many of theſe erroneous and falſe notions with reſpect to moles; but none have been more productive of them than this belief, which has been almoſt general to writers on midwifery, that, if part of the *placenta* were left adhering to the *uterus*, it would grow and form a mole: Thus, Dr. Enton ſays, *page* 142, "A mole is "often occaſioned by the retention of ſome part "of the *placenta*, which cloſely adhering to the "*uterus*, grows by degrees, and forms this "fleſhy maſs." This was one of the abſurd reaſons alledged for the injurious practice of a violent delivery of the *placenta:* but it is ſufficiently refuted in the above remarks. For, if the intire *placenta* cannot be nouriſhed, after the death of the *fœtus*, much leſs can a lacerated portion of it.

It may be ſaid, however, that certainly moles have been often ſeen: and it muſt be admitted to be ſo, when the word is confined to thoſe deliveries, which conſiſt of after-births that have remained in the *uterus* after the death of the child, ſo long as to ſuffer a putrefactive ſolution of the *fœtus* that obliterates its form, which ſometimes very ſoon happens. All the other related obſervations of moles, are, when true, nothing more than a confuſion of *monſtruous dead fœtuſſes*;

fœtuſſes; *excreſcences of the* uterus *itſelf*, joined to its ſurface by a pedicle; *concretions, or coagulations of blood* retained after floodings, ſometimes with, and ſometimes without a detached conception; and more rarely *hydatids*, of which the particular mode of production has not been hitherto well enough obſerved to determine with certainty their origin: though the doctor has, from ſome circumſtances, related, in his *Treatiſe on the Diſeaſes of Women*, rationally aſcribed them to conceptions, in which the *embryo* has periſhed. All theſe ſeveral appearances have been each, on their occurrence, deemed moles: a name which was always ready to be applied to any præternatural body in the *uterus*, but a diſcriminable *fœtus*: if a ſuppoſed, or real pregnancy had preceded the production.

Dr. Smellie ſeems to have been the firſt writer who has ſet this falſe opinion of the production of moles in a juſt and ſenſible light; though he did not deciſively reject the doctrine of communication of blood betwixt the mother and child, nor underſtand the true conformation of the *placenta*, which evinces, as above mentioned, that there can be no growth of it, after the delivery. Proceeding on the obſervation of facts only, he, however, ſays: "Some people have "affirmed, that the *placenta* being left in the *ute-* "*rus*, after the delivery of the child, grows gra- "dually larger: but the contrary of this aſſertion "is proved by common practice, from which "it appears, that the *placenta* is actually preſſed "into ſmaller dimenſions, and ſometimes into "a ſubſtance demi-cartilaginous. For, after "the death, or delivery of the child, the "ſecundines receive no farther increaſe or "growth."

" growth." He ſays farther, " ſhould the *em-*
" *bryo* die, ſuppoſe in the firſt or ſecond month,
" ſome days before it is diſcharged, it will ſome-
" times be intirely diſſolved, ſo that when the
" ſecundines are delivered, there is nothing elſe
" to be ſeen. In the firſt month, the *embryo* is
" ſo ſmall and tender, that this diſſolution will
" be performed in twelve hours. In the ſecond
" month, two, three, or four days will ſuffice for
" this purpoſe; and even in the third month,
" it will be diſſolved by fourteen or fifteen: be-
" ſides, the blood forms thick *lamina* around the
" *ovum*, to the ſurface of which, they adhere
" ſo ſtrongly, that it is very difficult to diſtin-
" guiſh what part is the *placenta*, and what
" membrane. Even after the *embryo* and *placenta*
" are diſcharged, in the ſecond or third month,
" the mouth and neck of the womb are often
" ſo cloſely contracted, that the fibrous part of
" the blood is retained in the *fundus*, ſome-
" times to the fifth or ſeventh day; and, when
" it comes off, exhibits the appearance of an
" *ovum*; the external ſurface, by the ſtrong
" preſſure of the *uterus*, reſembling a membrane,
" ſo that the whole is miſtaken for a falſe con-
" ception." This deceptive appearance of the fibrous part of the blood like fleſh, he has extremely well exemplified, and illuſtrated, in the *collection viii.* of his caſes: where the moſt ſatisfactory inſtances, ſhewing the vulgar errors reſpecting moles, will be found.

SECT. VI.

Of the error, in imputing the incitement of the pains, and efforts to the calcitration, *or kicking of the child againſt the* uterus.

Dr. Astruc has aſcribed the beginning of the efforts and action of the *uterus*, in labour, as alſo a principal part of the progreſſion of it, to the irritation, cauſed by the *calcitration*, or kicking of the feet of the child againſt the *fundus* of the *uterus*. He ſays, *page* 34, "The "child, nevertheleſs, uneaſily conſtrained in its "new poſture, takes advantage of the power of "extending its legs; and, kicking, ſtrikes a-"gainſt the inner ſurface of the *uterus*; and "cauſes ſlight pains, which are the forerunners "of the labour." And, afterwards, "in pro-"portion as the ſubſtance of the neck of the "*uterus* gives way, and diſtends, the child "deſcends more and more, being puſhed by "the efforts it makes in *ſtretching itſelf*, by the "hold, which its feet have againſt the *fundus*; "and by the contractions of the *uterus*, that it "excites by the kickings." In ſeveral other places, likewiſe, he lays the ſame ſtreſs on this principle, as the cauſe of the throws, and extruſive action of the *uterus*: and he is accompanied in this opinion, by many other writers on this ſubject. This is, however, only a ſpecious *hypotheſis*, taken up to explain more eaſily, to the imagination, the proceſs of nature in parturition: but without any ground from juſt obſervations; or, indeed, contrary to them. That the pains of labour are not chiefly, if at all, excited

cited by the action of the feet of the child on the *uterus*, is evinced by their happening with equal effect, in the case of labours where the child is dead; and, also, in miscarriages; where the *fœtus* is too small, its limbs too flexible, and its situation too constrained, to exert any such action on the *uterus*. If, therefore, calcitration was the cause of it, labour could not there be brought on: where it is wholly wanting: and yet we see no such deficience. Moreover, in oviparous animals, the same uterine contractions and efforts are produced, where there is no possibility of any such motion. In the case of living children, likewise, the mother frequently perceives no such motions: nor are the general complaints of pain, or extraordinary sensations, at all referable to them, according to the women's own account of them. It is not, therefore, in particular irritations of the parts, but in certain instinctive tendencies and powers, that we must place this spasmodic action, not only of the *uterus*, but of the other parts; which by their combined efforts promote the extrusion, or delivery of the child, or *fœtus*.

Considered as a mere speculation, it would not be of great moment here, to decide, to which of these causes the bringing on the pains and efforts of labour should be imputed. But Dr. Astruc, in establishing the calcitration of the child to be the chief one, has made it a fundamental principle, not only of prognostication, as to the difficulty of labours, under certain circumstances; but also of a variation of practice in some of the most material points.

If the immediate cause and support of labour pains were the kicking and stretching out of the

legs, the defect of this action muſt, in the caſe of a dead child, neceſſarily prevent the coming on of labour, or retard the progreſs of delivery. Accordingly, Dr. Aſtruc prognoſticates a general difficulty in all ſuch conjunctures, "Becauſe," as he ſays, "the *uterus* not being irritated by the motions of the child, the mother has only weak and few pains, or efforts." And, "becauſe the child, which cannot ſtretch itſelf out, does not aid the delivery by puſhing its head againſt the orifice to open it." On this foundation, he adviſes a violent delivery; the forcible dilatation of the orifice, which is ſometimes not practicable, and always injurious or hazardous; and the turning the child, if it preſent with the head, even though labour come on ſpontaneouſly, except, "the head be ſo far in the paſſage, that there is no hopes of puſhing it back." If this advice were in all caſes purſued, and according to his direction, that, "as ſoon as the midwife is well aſſured of the death of the child, ſhe ſhould uſe the greateſt diſpatch to perform the extraction of it," the moſt fatal conſequences muſt, where there would not otherwiſe be any danger, be frequently the reſult. There are but few inſtances, where labour is not in a greater or leſs ſpace of time, after the death of the child, naturally brought on; and, in the ſame manner, and with the ſame effect as in the caſe of a living child: if the mother be not herſelf in a very weak condition, or the child much tumified: whence, the delivery will, therefore, happily follow in the natural way. It muſt, conſequently, be the moſt erroneous practice, to attempt a forcible delivery, though nature does not in a ſhort time bring

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on labour; or to turn the child, when ſhe does, if it preſent by the head. Such a procedure can be only right in two caſes: where a violent continued flooding renders quick delivery neceſſary to prevent the death of the woman, by the hœmorrhage: or where the woman herſelf is ſo reduced in her ſtrength, as to take away all hopes of her ſupporting a natural labour. Where the child is not enlarged by putrefactive ſwelling, the labour and delivery is the ſame as in a living child: which Dr. Smellie, in more than one part of his book, very juſtly aſſerts from his own experience. Dr. Aſtruc ſtill reaſons as he did in the caſe of dead children, with reſpect to abortions: which, he ſays, are more difficult, "becauſe, the miſcarriage does not aid by its kicking its own excluſion, or but in a ſmall degree: whereas, the child of full nine months, which is ſtronger, does aid it effectually." And, alſo, in the compariſon he makes, betwixt the delivery, by the head; and that by the feet, *page* 63 and 64. But, as far as his reaſonings depend on the reality of the calcitration, as the chief cauſe of labour pains, they ſhould be rejected: it being evident, from the reaſons above given, that either it has no ſuch effect, or but a very ſlight and rare one.

Indeed, the reality of any ſenſible motion, or kicking of the child, during the pregnancy, or labour, carries a great doubt with it: though it is ſo generally received, that it may ſeem a degree of audacity to bring ſuch a matter in queſtion. But whoever conſiders how early in pregnancy, even ſometimes before the end of the third, or beginning of the fourth month, this motion is ſaid to be felt; how ſmall, ſoft, and

defective of due rigidity for the ſtriking a forcible blow, the limbs of the child are then, and even in the fifth month; how unfit the coiled or folded-up poſition of the child is, for extending its legs, and exerting ſuch an action, eſpecially againſt the ſides of the *abdomen*, where the ſtrokes are moſt frequently felt, at the ſame time that the feet of the child are puſhed upwards againſt the hinder part of the *fundus* of the *uterus*, whence they cannot move; I ſay, whoever well conſiders theſe circumſtances, muſt find great difficulty in conceiving how ſuch a ſmart blow can be given by the feet of the child, as ſhall be felt in the fore-part of the *uterus*, through the waters of the *amnion*, the membranes, and all the abdominal contents and integuments, which intervene. But ſuch a motion is felt: and, therefore, how can the matter be controverted? It is true, the motion is felt: and, therefore, that fact cannot be controverted: but it is the cauſe of the motion, and not the motion itſelf, which is the matter of doubt. We find ſimilar ſpaſmodic motions in other parts, particularly in the induration of the ſpleen, and other diſeaſes of the *viſcera:* and they may be conceived to be particularly producible, and even neceſſary to be produced in the extraordinary changes and diſtention, which the *uterus* ſuffers in pregnancy. But, if we go beyond the conſideration of the power the womb may have analogouſly with other parts to produce them, and the juſtly preſumed reaſon there is, that in the circumſtances of pregnancy, it ſhould produce them; and find, that they are really perceived in an equal or more conſiderable degree, where there is no living child, nor perhaps any

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at all, to produce them; the doubt will ſtill appear more reaſonably founded. For it is, unqueſtionably, a certain fact, that theſe motions of the *uterus*, reſembling, and ſaid to be the kickings of a child, are found when the child is actually dead; and, in a conſiderable degree, likewiſe, when thoſe fleſh-like maſſes, called moles, grow large in the *uterus:* as alſo, indeed, in any caſe of diſeaſes, where the *uterus* ſuffers a diſtention, equal to that of pregnancy in the latter months. That the child is ever felt, or ever does kick, before delivery, may be, therefore, reaſonably queſtioned: though, I do not take upon me to decide the matter; but ſubmit it to further obſervations. And it is of conſequence it ſhould be determined: ſince, if it be not ſo, the wrong belief of it may be, and moſt probably has been, the frequent occaſion of falſe prognoſtic and diagnoſtic judgments.

CHAP. II.

Illuſtrative remarks on thoſe particulars in the practice taught by Dr. Aſtruc, *which vary from the methods adopted by the beſt* accoucheurs *here.*

SECT. I.

Of the conduct to be obſerved in floodings during the pregnancy.

IN continued floodings during pregnancy, which give way to no means of remedy, but threaten to exhauſt the patient, Dr. Aſtruc has very properly adviſed a forcible delivery, as the

only reſource. There are, however, ſuch degrees of this accident, as do not require ſo hazardous a treatment, but are to be ſurmounted by medical art; and, indeed, ſometimes even ſuch as nature herſelf overcomes. In thoſe caſes, where he allows there is a chance of relief from medicines, he has omitted, nevertheleſs, to adviſe the uſe of that method which is moſt effectual, that is, the adminiſtration of *opiates*. He directs, indeed, very rightly, the previous uſe of bleeding: but then, inſtead of having recourſe to the bark and narcotics, which are the only effectual medicines, he ſubjoins a multiplicity of ſuch as are of no, or very inadequate efficacy: as orange flower water; decoction of mugwort, or motherwort; oil of ſweet almonds; diſtilled water of milfoil, or plantain; maſtich; powdered biſtort root, &c. with embrocations, fomentations, or Madam Fouquet's plaſter: all which, are either very little or nothing to the purpoſe in this caſe. Inſtead of theſe, where relief can be given, it is, after bleeding copiouſly, according to the ſtrength of the patient, in the arm, by the aid of opiates; which ſhould be tried, firſt in a more ſparing, and if that and the bark do not avail, then in a more free and copious manner.

It is therefore proper, firſt, to give an ounce of *diacodium*, diluted with water, and half a ſpoonful of brandy; which may be repeated for ſeveral nights ſucceſſively; or if that do not ſucceed, two ounces, even though the hœmorrhage appear to ceaſe. The *diacodium* is preferable to opium itſelf, or laudanum, where it will have a ſufficiently ſtrong effect; becauſe many of thoſe women, whom, from ſome idioſyneraſy,

opium

opium diſagrees with, bear diacodium without any inconveniencies: and, indeed, containing leſs of the reſinous juice of the poppy, it has leſs of that quality of inducing an irritable ſtate of the nerves, after the ſedative effect ceaſes, which is found in opium; eſpecially in its more reſinous parts. As to the reaſon of adding the brandy, it is known from accurate obſervation, that vinous ſpirit joined, in a moderate proportion, with the opium, prevents that irritable ſtate, which otherwiſe ſucceeds the ſedative action; and tends, in the preſent caſe, rather to increaſe than check the diſorder. If the diacodium be not found ſufficient, laudanum may be ſubſtituted: and twelve drops diluted with water and a ſpoonful of brandy, may be given. Where this has not the deſired effect in ſome hours, eighteen drops, or the next day, if that be not effectual, twenty-five or thirty drops, with a large ſpoonful of brandy added to the water, may be tried. In this way, phlebotomy being joined, according to the ſtrength of the patient, with a total refraining from all motion, and the uſe of a low cool diet, even dangerous floodings may be checked, and removed; eſpecially where they are not owing to the ſeparation of the *placenta* from the *uterus* in any large part of its ſurface: and where the flooding is aggravated by an irritable and ſpaſmodic ſtate of the *uterus*, producing convulſive pains and efforts. Dr. Smellie adviſes the uſe of tincture of red roſes acidulated with oil of vitriol; and "water in "which a red-hot iron has been ſeveral times "quenched, mixt with a ſmall proportion of "red burnt wine." But theſe are much too ſlight in their power, if aſtringent remedies

were

were appoſite to the intention: and certainly are more fitted to amuſe than relieve the patient. In very alarming caſes, even the more gradual uſe of opiates ſhould not be truſted: but twenty, or more drops of laudanum immediately given; and rolls of linen dipped in vinegar applied to the *vulva* and *vagina*.

SECT. II.

Of the conduct to be obſerved in the caſe of violent convulſions preceding labour.

Dr. Astruc ſpeaks of hyſterical convulſions, as being ſometimes a great cauſe of the difficulty of labour: and they are ſo ſometimes, likewiſe, of abortion in the latter part of pregnancy. When they are not very violent, eſpecially in perſons ſubject to hyſteric fits, or continued, they may be ſuffered to take their courſe in both caſes: and frequently terminate in fainting, which removes the irritability that occaſions them. But where they are more formidable by their degree, continuance, or quick return, medical art ſhould interpoſe; and may, with great proſpect of relief: as the irritability, which occaſions theſe diſorders may be taken off, and the ſpaſms quieted, by the due uſe of ſedative means. Inſtead, however, of the efficacious and eaſy remedies, which may be applied in this caſe, Dr. Aſtruc has, in this work, bleeding only excepted, mentioned ſuch as are trivial, and very incommodious in the ſtate of the patient while thus affected. He ſays, "at "the ſame time emollient fomentations ſhould "be made on the *abdomen*, and clyſters ſlightly

"pur-

" purgative, and even purely anodyne, ſhould " be given. It has been even propoſed to put " the lying-in woman into a warm bath, to re- " lax effectually." The fomentations and bath, are, however, not only very troubleſome, in the caſe of a woman in ſtrong convulſions; but are very precarious in their effects: being not only incapable of reaching the cauſe, but, perhaps, in ſome caſes, even liable to aggravate it. The anodyne clyſters are more appoſite to the intention; but cannot be depended upon, by far, ſo much as opiates adminſtered at the mouth. The moſt truly effectual method therefore, where bleeding has not ſucceeded, is by the uſe of opiates taken into the ſtomach: which will, in moſt caſes, quiet the ſpaſmodic action, by removing the irritability.

The proceedings in the uſe of opiates in this caſe, may be the ſame as are directed in the preceding ſection, in the caſe of floodings: except that the *diacodium*, or laudanum, may be originally tried, in a ſomewhat larger doſe; and the proportion of brandy doubled. The reaſon for which, in this caſe is, that vinous ſpirit, not only counteracts the tendency of the opium, before mentioned, to bring on an irritable ſtate after the ſedative action is ceaſed; but even, by its own effects, contributes to remove the effects of the hyſterical *ſtimulus*, to which the convulſions are owing.

SECT.

SECT. III.

On the poſture, in which women may be beſt delivered: and the preparation neceſſary for it.

IN natural deliveries, attended with no embarraſſing accident, the poſture of the woman in labour is more to be conſidered, with reſpect to the convenience, to herſelf and the midwife, or *accoucheur*, than to any other conſequence. In difficult labours, various poſitions become expedient; according to the operation the *accoucheur* is to perform, or the change that is to be made in the ſituation of the child.

In natural deliveries, where the labour is ſhort, the moſt advantageous poſture for the exertion of the efforts, and the facilitating the birth, is ſtanding on the legs with the body leaning forward; and ſupported, by the hands fixt on ſome proper reſting place: and this was formerly the practice in many places. But the fatigue in protracted labours; the greater delicacy in female conſtitutions, from the preſent modes of life; the danger, both to the mother and child, of falling and receiving ſome hurt; with other reaſons; have juſtly exploded this practice.

Inſtead of it, various other methods have prevailed in different places. In France, a poſture betwixt ſitting and lying was introduced, and prevails in general at preſent: the woman being placed on the end, or ſide of a bed, or on a couch; or put into bed, and her back raiſed by ſome ſupport. But of this Dr. Aſtruc has not given any particular account. For, notwithſtanding

ing it was one expreſs part of the ſubject of *chap.* VI. *book* 2. as he ſays in the beginning of that chapter. "One of the moſt important ar-
"ticles, and for which, even preparation ſhould
"be made before hand, is to determine the
"manner in which ſhe ſhould be placed, in or-
"der to be delivered," yet, he has neither indicated, nor deſcribed it; but ſpeaks of a labour-bed formerly uſed with convenience, and advantage, though now rejected; in conſequence of which there is, as he ſays, "a neceſ-
"ſity, at preſent, to deliver all women, either
"upon a long common ſeat, or on their own
"bed." It is not decided, therefore, by any thing here advanced, whether the poſture on the long common ſeat be, that between ſitting and lying, or abſolutely lying; or whether, if lying, it be on the back, or ſide. He is, likewiſe, ſilent as to other circumſtances of preparation of the woman's dreſs, *&c.* which it is nevertheleſs material the midwife ſhould know.

In London, the practice is, to make the woman lie on her ſide. The manner of which is deſcribed by Dr. Smellie; who ſpeaks thus of it; and of the ſubſervient and attendant preparations that ſhould be made. "The London
"method is very convenient in natural and
"eaſy labours. The patient lies in bed upon
"one ſide: the knees being contracted to the
"belly, and a pillow put between them, to
"keep them aſunder. But the moſt commo-
"dious method is to prepare a bed, and a
"couch, in the ſame room. A piece of oiled
"cloth, or dreſſed ſheep's ſkin, is laid a-croſs
"the middle of each, over the under ſheet;
"and above this, are ſpread ſeveral folds of
"linen

" linen pinned, or tied with tape, to each ſide of
" the bed and couch. Theſe are deſigned to
" ſpunge up the moiſture, in time of labour,
" and after delivery, while the oil cloth, or
" ſheep ſkins below, preſerve the feather-bed
" from being wetted, or ſpoiled. For this
" purpoſe, ſome people lay, beſides, upon the
" bed, ſeveral under ſheets, one over another;
" ſo that, by ſliding out the uppermoſt every
" day, they can keep the bed dry, and com-
" fortable. The couch muſt be no more than
" three feet wide; and provided with caſtors:
" and the woman, without any other dreſs,
" than that of a ſhort, or half ſhift, a common
" ſkirt, or petticoat, open before, and a bed-
" gown, ought to lie down upon it; and be
" covered with cloaths, according to the ſeaſon
" of the year; ſhe is commonly laid on the left
" ſide: but in this particular, ſhe is to conſult
" her own eaſe; and a large ſheet, being
" doubled four times, or more, one end muſt
" be ſlipt in below her breech: while the other
" hangs over the ſide of the couch, to be ſpread
" upon the knee of the *accoucheur*, or midwife,
" who ſits behind her on a low ſeat. If there
" be no couch, the bed muſt be furniſhed with
" the ſame *apparatus*.—Some again are laid
" a-croſs the foot of the bed, to the head of
" which, the cloaths are previouſly turned up,
" till after delivery, when the woman's poſture
" is adapted; and then are rolled down again,
" to cover and keep her warm: by this expe-
" dient, the place of a couch is ſupplied, and
" the upper part of the bed preſerved ſoft and
" clean: whereas, thoſe who are laid above the
" cloaths, muſt be taken up, and ſhifted, while

" the

" the bed is put to rights; in which caſe, they " are ſubject to fainting; and to ſuch as are " much enfeebled, this fatigue is often fatal."

Roderer, in his *Elements of the Art of Midwifery*, one of the lateſt treatiſes publiſhed on that ſubject, mentions the delivery in the poſture of lying on the ſide, as the common Engliſh practice: and rightly remarks, that it has a conſiderable advantage in preventing the preſſure of the *coccyx*, and ſome other conveniencies. But he, nevertheleſs, gives the preference to the lying on the back on a bed, made purpoſely with croſs boards, at the head and feet; and handles at the ſides: much in the ſame manner, as that which Dr. Aſtruc has deſcribed, *page* 37. In this bed, he directs the woman to be kept, till the time when the child is ready to paſs the external orifice; and then, by means of a pillow placed under her loins, and a ſheet folded in four doubles, and put under her, likewiſe, to move her to the extremity of the bed. But the preparing a bed of a particular form, and the moving the woman, in the inſtant of delivery, are a needleſs trouble, in natural and common labours; where no particular accidents occaſion any difficulty: and the patient lying on her ſide, on a bed, or couch, in the manner above directed, according to Dr. Smellie, is a ſituation eaſy and commodious to herſelf, and the midwife, or *accoucheur*, who attends her; and, in which, the efforts will have their due effect, equally as in any other poſition. The above preparation with reſpect to the covering the bed, &c. are, alſo, very convenient, and proper; not only with reſpect to the preſerving the patient from catching cold, or from being too much

much moved in putting her to bed after the labour; but for that decency and cleanlineſs, which is becoming a civilized country.

This, therefore, is the moſt eligible method in ſhort and eaſy labours. But where difficulties occur, the poſture muſt be ſuited to the occaſion. In protracted deliveries, where there appears no impediment, but that the efforts have too ſlow an effect, the woman may be raiſed, and placed in the poſition between ſitting and lying; in which the weight of the maſs of the child, waters, and membranes, will aid the extruſive force: and the efforts themſelves will be greater from the more free uſe of the *abdominal* and other muſcles, contributing to form them. Even a more erect poſture may, for theſe reaſons, be ſometimes advantageous: and the woman being ſupported, or taking hold with her hands of ſome fixt body, to prevent accidents, may either ſtand, or kneel. Where there is occaſion to put back the child, in order to turn it, or for any other reaſon, the woman muſt be laid with her face upwards, and her breech raiſed higher than her ſhoulders; and in the delivery by the feet, the head and ſhoulders are beſt managed in the poſition of lying on the back. But where the feet of the child are not eaſily found, eſpecially when they are towards the belly of the mother, the poſture of lying on the ſide; or, as directed by Daventer, of leaning on the knees and elbows; ſhould be reſpectively tried.

SECT.

SECT. IV.

On the conduct to be purſued in a natural labour, not attended with any peculiar difficulty.

IN natural labours, where no difficulty occurs, it is unqueſtionably right, that a proper time ſhould be allowed for nature to perform unmoleſted her own proceſs of parturition: which will, in all ſuch caſes, proceed better than if perverted by the interpoſition of art. But, even in natural labours, where the poſition of the child is right, and the formation of the baſon admits of its paſſage out; yet if any impediment, or extraordinary retardation ariſe from the peculiar form or texture of the ſofter parts, which make the interior or exterior orifices of the *uterus*, through which the child is to paſs, after its head has freed the baſon, the interpoſition of art is then proper, to prevent injuries to thoſe parts, or accelerate the birth.

Dr. Aſtruc, however, ſeems to recommend the dilatation of the orifice, in all caſes of the *uterus*, as a general practice. He ſays, in ſpeaking of the period of labour, which he calls the beginning of labour. "In this period, the mid-"wife has not much to do. She may, never-"theleſs, a little aſſiſt the dilatation of the ori-"fice." And he accordingly directs all the fingers to be introduced into the orifice, and there uſed as a forcible dilatior. And below, he again ſays, ſpeaking of the progreſſion of the labour, "the midwife muſt continue to aid the dilata-"tion of the orifice of the *uterus*, by the means "we have before mentioned."

As the making any forcible dilatation is very unneceſſary in common caſes of natural labours, where no particular accidents render it proper, it certainly ought not to be practiſed, for ſeveral reaſons. In women, who are very irritable, and have great ſenſibility in thoſe parts, it is extremely troubleſome, and painful: and muſt, of courſe, excite ſpaſmodic orgaſms, that interfere with, and check the true labour pains, and tend to relax the patient and weaken the efforts: as is, indeed, known from unqueſtionable obſervations, that a titillation in the orifice of the *uterus*, will prevent the true pains and efforts, and even ſuſpend a violent flooding. Moreover, as the midwife cannot be certain preciſely, when the ſtrong pains and efforts will happen, that are capable of forcing the child into the paſſage, ſhe may ineffectually repeat this operation, a number of times: which may, in many caſes, bring on a degree of inflammation, that would be greatly injurious, not only to the delivery, but to the woman afterwards.

The woman in labour, therefore, being put in a proper ſituation for delivery, when the ſtrong pains come on, it is beſt, where no particular circumſtance, or extraordinary difficulty appears, to leave the reſt to nature, and to be prepared only to receive the child, when it can be taken from the paſſage without force.

This is the proper conduct in caſes, where no difficulty, delay, nor danger of injury to the parts, occur. But it is nevertheleſs, in other caſes, ſometimes very requiſite, even in thoſe labours which may be deemed natural, to aſſiſt the delivery; and interfere, by manual aſ-

ſiſtance,

ſiſtance, to prevent the injury of the parts, or to facilitate and expedite the delivery.

The danger of injury to the parts, in natural labours, may be, either to the *uterus* itſelf, or to the external orifice. The *uterus* may ſuffer, either by the undergoing a *deſcenſus* or *prolapſus* of itſelf: or by the laceration or contuſive diſtenſion of its orifice, the *os internum*. The exterior orifice may ſuffer, by a laceration of the *perinæum*; and even ſometimes of the *vagina* itſelf.

With reſpect to the firſt miſchief to the interior orifice, the midwife may be aware of the danger of it, if ſhe find that, notwithſtanding the child preſent properly, and the efforts be ſufficiently ſtrong, and repeated for a long time, the orifice does not give way, nor the child advance through it; or that if it do advance, the neck of the *uterus* is protruded, or brought forwards along with it. In ſuch caſe, it is proper to lubricate the orifice with pomatum, or freſh butter; after making a gradual dilatation of it, by the fingers ſucceſſively introduced, and paſſing the hand betwixt the child and its edges, to keep them back, during the extruſive efforts, till the thickeſt part of the head be within them: and even then, if the *uterus* be already thruſt very forwards externally, to check the too quick forcing out of the child, by making ſome reſiſtance againſt it, that it may gradually free the paſſage; and not bear the *uterus* too ſtrongly forwards. By theſe means gently and deliberately performed, very bad lacerations, and troubleſome *deſcenſuſſes*, may be prevented; and the operators give eſſential

proofs of the utility of the obſtetric office in particular caſes.

As to the ſecond miſchief in natural labours, the laceration of the *perinæum:* it is proper to take ſome previous caution, by an examination of the formation of the parts; for where the *perinæum* comes forward over the exterior orifice, as is found in ſome women, or the external parts are ſmall, ſtrait, and firm, there is always ſome danger: and the midwife, being apprized of it by ſuch examination, ſhould be attentive to prevent it. The means of doing this, is to lubricate the parts well with pomatum; and when the head of the child is ſo far advanced, that it clears the interior orifice, and bears againſt the *perinæum*, to paſs the fingers betwixt it and the head of the child, and force the *perinæum* towards the *os ſacrum*, till the efforts have brought the head fairly within the orifice; and then to reſiſt gently when other efforts are made, to prevent the too rapid propulſion of the child. By this means, the child being prevented from bearing on the ſubſtance of the *perinæum*, will be by degrees forced into the orifice, and take a right direction with regard to it; and the force being more gradually exerted, the dilatation will be ſo likewiſe, and the ſubſtance of the *perinæum* will diſtend, inſtead of being ruptured: whence this very diſagreeable, and, indeed, ſometimes very miſchievous accident, will be avoided. As to thoſe caſes, where the *perinæum* is in danger from the general rigidity, and the *os internum* of the *uterus* is protruded, or ready to be protruded thro' the external orifice, the means of prevention have

have been before mentioned in the preceding paragraph.

Though the paſſive proceedings, and omiſſion of all force, here recommended, is the right conduct in all common labours, where no particular reaſons appear to the contrary; yet if the delivery do not advance, after waiting a long time; the natural efforts do not ſeem ſufficient to produce it; and there is danger of the woman ſinking fatally, from fatigue and want of reſt; or where the delay is attended with a flooding, that threatens to exhauſt the woman; it is proper to give aſſiſtance, or, in ſome caſes, even to make a forcible delivery.

There may be three cauſes of retardation of delivery, which may make this aid requiſite; where no particular fault of conformation of the baſon, or of the poſition of the child, nor any entanglement of the cord, occaſion it. Theſe are, *a rigidity of the membranes of the after-birth: a rigidity of the parts of the woman*; or, *a failure of force in the efforts, from ſome cauſe of general weakneſs.*

The firſt caſe admits of two variations. The one, is where the membranes diſtend to a certain degree, and the waters form. This is diſtinguiſhed by the membranes not advancing after a certain time, nor conſequently the delivery; notwithſtanding the interior orifice of the *uterus* be ſufficiently dilated, and opened; and the efforts have continued afterwards to be ſtrong and frequent enough; while, at the ſame time, the woman appears ſunk; or in danger of being ſo, from too great flooding. Under theſe circumſtances, the membranes ſhould be broken; which ſhould be done, if practicable, by the

fingers, or nails; but, otherwiſe, by the point of a probe or ſciſſars, that the waters may be diſcharged; and the obſtruction from the reſiſtance of the membranes removed. The other caſe is, where the membranes are not protruded as they ought to be, and little or none of the waters form, or are diſcharged. This is eaſily perceivable, and may be diſtinguiſhed by the touch, from the caſe, where a ſimilar appearance might happen from the membranes being already broken: as in theſe circumſtances a ſmooth ſurface, inſtead of the hairy ſcalp, as when the membranes are broken, will be felt by the finger. In this caſe alſo the membranes muſt be broken, when the ſame reaſons for its being neceſſary occur, as have been juſt before enumerated. But it muſt be here performed gradually, by ſcratching the membranes a little on every returning pain, with the nail of one of the fingers, till, being worn thinner and thinner, they will be at length ſplit by the force of ſome effort, and diſcharge the waters.

In caſes of retardation of the labour, from the rigidity of the parts of the woman, when aid becomes neceſſary, from the circumſtances that furniſh the reaſons before given, the delivery muſt be aſſiſted by the manual dilatation of the parts. The exterior orifice muſt, therefore, firſt be expanded by the gradual introduction of the fingers in the form of a cone, and then turning them round, ſo as to diſtend the parts by very gentle degrees, till the whole hand can be admitted; when the fingers, with the flat of the hand, ſhould be gradually paſſed, as before directed, into the interior orifice, betwixt the edges of it and the head of the child; which,

when

when ſkilfully performed, will open, and adjuſt the paſſage in ſuch a manner, that the head may be forced by the efforts into it.

Where the retardation of delivery happens from the weakneſs of the efforts combining with ſome degree of rigidity, the ſame means muſt be uſed to try to facilitate it. But, in this caſe, the aid of nouriſhing and cordial remedies ſhould be taken: or, if the circumſtances ſhew it to be neceſſary, the repoſe of the woman: in order to which gentle narcotics are to be given. Theſe nutritive remedies are rather of the nature of diet than medicine: and the culinary compoſition called caudle, as uſually prepared on this occaſion, will equally well anſwer the purpoſe with any officinal compoſition.

The dilatation of the *uterus*, ſhould not be practiſed, however, in natural labours, till ſome of the reaſons above mentioned make it abſolutely requiſite. The breaking the membranes ſhould be even yet more cautiouſly undertaken: and never till it be evident, that their rigidity is an inſurmountable, or at leaſt very great impediment to delivery. For, if the obſtacle lye in any other circumſtance, the loſs of the waters will augment the difficulty: as they give the moſt effectual aſſiſtance, till they be formed to a certain degree, to the gradual and proper dilatation of the interior orifice, and to the true direction of the propulſive force of the efforts. The interpoſition above directed, to prevent the laceration of the *perinæum*, or the *deſcenſus* of the *uterus*, may be more readily and boldly entered upon: as by a careful obſervation and examination, the expedience of it, in the caſes where it

is neceſſary, may be with more certainty diſtinguiſhed.

SECT. V.

Of the treatment of the child after delivery.

THE conſideration of the management of children immediately after their birth, is principally confined to four objects, where no particular circumſtances or accidents occur: theſe are, the *tying the umbilical cord*; *the cleanſing the ſkin*; *the dreſſing them*; and *the feeding them.*

In the inſtructions given, by Dr. Aſtruc, for tying the cord, he has adhered to the old practice of uſing two ligatures; and making the diviſion of the cord betwixt them. The employing two ſuch ligatures is, however, not only needleſs; but, in ſome caſes, even injurious to the woman in labour: as it tends to ſupport a greater degree of flooding, the very matter it is intended to remedy; and impedes, alſo, the natural ſeparation and delivery of the *placenta*. The reaſon for thus miſtaking that to be an advantage, which is, in fact, the contrary, lies, as has been before intimated, in the erroneous notion above confuted; that there was a communication of blood betwixt the mother and the child; and, conſequently, that, if the end of the divided cord, which continued appendent to the *placenta*, were not ſecured, while the *placenta* remained conjoined to the *uterus*, an hœmorrhage would neceſſarily follow: the uterine veſſels, ſupplying the placentary with blood, which being carried into the cord, would flow out through the aperture of the end of its divided

vided vein. This reaſoning would certainly have held good, and the fact muſt have correſponded to it, had there really been any ſuch communication of blood betwixt the uterine veſſels and thoſe of the cord: and the ſuppoſition of an hœmorrhage that required to be prevented, was, therefore, on this *poſtulatum*, a very right inference. The belief of it was, moreover, ſupported, ſpeciouſly by the actual appearance of ſuch an hœmorrhage, as ſome ounces of blood are found to flow from this end of the divided cord, if no ligature, or other means, be uſed to prevent it; and as ſuch means being generally uſed, the limits of the hœmorrhage did not appear. But the proofs above given, that there is no communication of blood from the mother to the child, put this matter out of doubt: and the fact itſelf, of the hœmorrhage from the end of the divided cord, is found, when duly obſerved, to be entirely conformable to that principle. For after ſome ounces of blood are evacuated, it wholly ceaſes, though the *placenta* do ſtill adhere to the *uterus*: and it muſt be concluded, therefore, to be only a diſcharge of the blood, which was actually in the umbilical veſſels of the *placenta* at the time of cutting the cord; into which veſſels it had been before received from the child: the quantity agreeing with what may be juſtly preſumed to be ſuch a proportion.

It is, therefore, wholly unneceſſary, to make any ligature on the end of the part of the umbilical cord, which remains annexed to the *placenta*, on account of the ſuppoſed hœmorrhage through it from the *uterus* of the mother; ſince none ſuch can happen. But beſides its being needleſs,

needleſs, there are very material reaſons againſt it, from the actual injurious conſequences it may have, in caſes where there is a delay of the delivery of the *placenta*. By detaining the blood of the child, which is in the *placenta* at the time the cord is cut, and preventing it from being diſcharged through the end of the divided vein, the *placenta* is kept in its full magnitude and plumpneſs: whereas it would otherwiſe greatly diminiſh in its volume; and, by collapſing, grow ſoft. This diminution, and flaccidneſs, render the flooding leſs violent, if the *placenta* be not delivered ſoon after the child: as its greater magnitude and reſiſtance neceſſarily prevent the *uterus* from contracting; and its veſſels conſequently from cloſing, as they otherwiſe would: and likewiſe ſupport the pains and efforts, which ſtill increaſe the flooding, by forcing the veſſels. The natural ſeparation of the *placenta* from the *uterus*, is likewiſe retarded, by thus detaining the blood in the umbilical veſſels of the *placenta*: for the flaccid and collapſed ſtate being that inſtituted by nature, in this caſe is moſt favourable to the diviſion of the veſſels, that make the union betwixt the *uterus* and *placenta*.

The umbilical cord ſhould, therefore, be tied with one ligature only; which ſhould be carefully performed with waxed thread, in the manner Dr. Aſtruc has directed for the firſt ligature, taking care to avoid drawing the ſtring ſo forcibly as to cut the cord; and yet with ſufficient ſtrength to cloſe, by the compreſſure, the paſſage through the two arteries, which, with the vein, compoſe it.

There

There is, however, one neceſſary caution to be obſerved in the cutting of the cord, that Dr. Aſtruc ſeems to have omitted; which is, to delay the performance till it be found the child breath: as a fatal ſuffocation may otherwiſe happen, if the courſe of circulation be changed in a very weak ſtate of the child, before the blood find its way through the lungs. The child ſhould, therefore, in caſes where it is neither found to breathe, nor cry, be inſpected, that all impediments to its reſpiration may be removed; and that it may be brought to life as ſoon as poſſible. In order to this, if any torn part of the membranes cover the face, it ſhould be taken off; and the mouth ſhould be opened and freed from any mucilaginous matter. In the mean time the child ſhould be kept warm; and the animal action, particularly that of the pectoral muſcles, excited by proper *ſtimulas*. The moſt effectual *ſtimulas* would be the application of ſome warm body to the breaſt of the child; of that degree of heat, which would irritate without burning: but as the ſkin of the child is very tender, in this caſe it muſt be done with great care. The uſual practice has been, to move or ſhake the child; rub the head, temples, and breaſts, with ſpirits; apply garlic, onions, and muſtard, to its mouth and noſe; and even ſometimes to whip it. It is alſo, to the diſgrace of the preſent time, frequently practiſed, to blow into the mouth with a ſilver *canula*, in the abſurd notion of opening the lungs. The moving, ſhaking, rubbing the temples, *&c.* are proper, where they are ſufficient. The applying, garlic, onions, *&c.* to the mouth or noſe, are obviouſly ineffectual till the

the child breathe; becauſe the effluvia will not paſs where they are intended to act without inſpiration: and when the child does begin to breathe they may be injurious, and occaſion ſuffocation, if injudiciouſly managed. The blowing into the mouth ſeems introduced on a very erroneous notion, that the action of breathing is begun by the lungs: for Dr. Smellie ſays, this is to expand the lungs; whereas it is begun by the action of the pectoral muſcles, which expanding the cavity of the *thorax*, the exterior air, of courſe, diſtends the lungs from the circumambient preſſure of the atmoſphere: ſo that this force of blowing is wholly unneceſſary when the inſpiratory muſcles act; and ineffectual before, as the lungs being compreſſed in the cheſt cannot expand, till that enlarges to give it room. The tickling the ribs or the feet with a bruſh, and the blowing wine into the face and mouth of the child, as mentioned by Dr. Aſtruc, are not only inexpedient methods for the purpoſe; but, injudiciouſly managed, may, for very obvious reaſons, be dangerous. The moſt commodious and effectual way of bringing the child to breathe by the aid of *ſtimulas*, is, therefore, by the application of hot flannel to the breaſt; taking care the heat ſhall not be great enough to injure the ſkin: this may be diſtinguiſhed eaſily by the perſons applying the flannel; who ſhould take care, that it be not greater than they can bear without the leaſt pain: as that proportion will be ſufficient to give ſome degree of uneaſineſs to the child; which is in this caſe neceſſary. Care ſhould alſo be taken, that the hot flannel be removed, as ſoon as the child appears to breathe at all.

When

When the *placenta* is not delivered with it, the child muſt be kept warm, and in the moſt convenient ſituation the attachment to the cord will admit, till the cord can be cut. But where the *placenta* is delivered, together with the child, and no reſpiration is perceived, though there be other ſigns of life, the effect of cold on the *placenta* itſelf is alſo to be guarded againſt. Various means have been uſed for this purpoſe: but the immerſion of the *placenta*, and as much of the cord as can conveniently be ſo treated, in warm water, is the moſt ſafe, eaſy, and effectual: and this may be done with great convenience, by putting them in a baſon containing water of a gentle degree of warmth. Warm wine alone, or mixed with water, has been formerly uſed for this purpoſe, but is certainly improper; for its aſtringent action, if it have any effect at all, muſt do harm in this caſe. If the *placenta* do not come away, it is the moſt ſafe and expedient to uſe no means to haſten the extraction, till the child can be brought to life and the cord cut: as it is beſt preſerved of due heat in the *uterus* of the woman.

If the bones of the head be compreſſed much, or diſplaced in the birth; or if there appear any convulſion, or weakneſs in the nervous ſyſtem of the child, that may indicate the evacuation of blood to be neceſſary, the cord may be ſuffered to bleed to the quantity of two or three ſpoonfuls, after it be cut, before it be tyed, which will, in ſome caſes, be of material ſervice, and ſuperſede the occaſion of opening a vein.

With reſpect to the cleaſing the ſkin of the child, Dr. Aſtruc has recommended the practice in France, of uſing warm water and wine; oil

of

of almonds; or, in caſe of greater adheſion of the *ſerdes*, freſh butter melted in warm wine, and water. It has been alſo uſual here to uſe Hungary water, wine, or ale, with butter or *pomatum*, mixt with the water for the ſame purpoſe. But this uſe of ſpirits, wine, ale, or unctuous bodies with water is not only unneceſſary; but may in ſome caſes, be injurious. For the wine or ſpirit, will rather concrete than diſſolve the mucilaginous foulneſs of the ſkin: and the unctuous bodies may in very weak children, that have been bruiſed in the birth, and are diſpoſed to be feveriſh, obſtruct the perſpiration in an improper manner. Warm water, in which a little perfect old ſope, ſuch as the Caſtile, has been diſſolved, firſt uſed, and afterwards ſimple warm water, will the moſt effectually, and moſt innocently, cleanſe the ſkin of the child; and leave it in the ſtate moſt conducive to its health, or recovery from any injury in the birth. And if there be any remains of adhering viſcidity in particular parts, it had better be left to nature; which in due time will throw it off, together with the cuticle.

In the dreſſing the child, Dr. Aſtruc has not given any particular directions for the kind and form of the cloaths. However inſignificant, nevertheleſs, that attention may ſeem at firſt, it will not be found ſo, when, on examination into the facts, it ſhall appear, that not only the temporary diſeaſed ſtate, but the diſtortion, future tendency to diſorders, and even death of many children, have been owing to the ignorance, and folly, by which this matter was formerly, and is now among the common people, conducted. In the manner, which till lately prevailed,

prevailed, of ſwaddling children, they were not only tortured by the uſe of a very great number of pins, the points of many of which it was impoſſible for them to eſcape; but ſubjected to ſtrangulating ligatures of their limbs, and bodies; depriving them of the leaſt uſe of the legs and arms, to acquire an eaſy poſture; and impeding the circulation, and even reſpiration. Dr. Smellie has not only ſet this matter in a juſt light, but given very proper directions for reforming it, according to the more rational methods now purſued. It is, therefore, a kind of juſtice to his endeavours on this head, rather to quote, as follows, what he has ſaid, than to give remarks or freſh inſtructions upon it.

" During the time of waſhing and dreſſing " the child, it ought to be kept moderately " warm, eſpecially in the head and breaſt, that " the cold air may not obſtruct perſpiration: " the head and body ought, alſo, to be kept " moderately tight, with the cloaths, for the " convenience of handling, and to prevent its " catching cold, eſpecially if the child be " weakly; but, if it is vigorous, and full " grown, it cannot be too looſely cloathed, be- " cauſe the brain, *thorax*, and *abdomen*, ſuffer " by too great compreſſion. The cloathing of " new-born children, ought, alſo, to be ſuit- " able to the ſeaſon of the year, and the nature " of the weather; the extremes of cold and " heat being avoided, as equally hurtful and " dangerous. Inſtead of the many ſuperfluous " inventions of nurſes, and thoſe who make " cloaths for children, with a view to make an " expenſive and pompous appearance, the dreſs " ought to be contrived with all imaginable

" ſimpli-

" ſimplicity. The child being waſhed, the navel-
" ſtring ſecured, and the head covered with a
" linen or woollen cap, as already directed, a
" ſhirt and waiſtcoat may be put upon the body,
" and over it a flannel ſhirt or petticoat, open
" before, with a broad band, as commonly
" uſed; or rather a waiſtcoat joined to it, ſo as
" that they can be put on at once: this
" ought rather to be tyed than joined before;
" and, inſtead of two or more blankets, may
" be covered with a flannel or fuſtain gown;
" while the head is accommodated with another
" cap, adorned with as much finery as the tire-
" woman ſhall think proper to beſtow.

" In ſhort, the principal aim in this point is,
" to keep the child's head, and body, neither
" too tight, nor too ſlovenly, too hot nor too
" cold; that it may be warm, though not over-
" heated, and eaſy, though not too looſe; that
" reſpiration may be full and large; that
" the brain may ſuffer no compreſſion; and,
" that, while the child is awake, the legs may
" be at liberty; to reject all unneceſſary rollers,
" croſs-cloths, neck-cloths, and blankets; and
" to uſe as few pins as poſſible, and thoſe that
" are neceſſary, with the utmoſt caution."

As to the feeding children, Dr. Aſtruc is ſilent in this work, with reſpect to it, further than by ſaying, " they ſhould not be ſuffered to ſuck
" the breaſt for fifteen, twenty, or twenty-four
" hours; but, that in the mean time, a little red
" wine and ſugar ſhould be given them to ſuck,
" in order to cut the phlegm which is in the
" ſtomach." It is, nevertheleſs, the office of a midwife, when no phyſician attends, to direct the management of children, in the month, as well

well in regard to their food, as other points; and, therefore, it ſeems an omiſſion not to have entered into it more particularly in this work.

With relation to the ſlight inſtruction, Dr. Aſtruc has here advanced, of giving the child ſugar, and red wine as ſoon as it is born, the practice is extremely exceptionable; and the reaſon he gives for it weak.

Red wine and ſugar, are very different from the ſoft gentle emulſion, or milk, which nature has prepared for the tender bowels of the child, and its weak power of digeſtion: and the wine being auſtere, and both that and the ſugar aceſcent, they have much more tendency to produce gripings and conſequential convulſions, than any ſalutary effect. As to the exiſtence of phlegm in the ſtomach, it is the imagination of the nurſes, and old women, who firſt introduced this practice: and, if there were ſuch phlegm, the notion of cutting it by red wine and ſugar, is equally wide of any rational ſentiment of ſuch matters.

The milk of the mother, or ſome other woman delivered about the ſame time, ſuppoſing them healthful, is certainly the natural food of children, and moſt fit and right for them: and the time of ſuffering them to ſuck, both for the advantage of the mother and child, may, with equal reaſon, be eſteemed to be that, which nature has inſtituted: which is, as ſoon as the child is diſpoſed to ſuck the milk, and the mother is able to yield it.

There are, however, many caſes in which, for various reaſons, it is expedient to feed the child with other food. This ſhould certainly be as near that intended by nature as it can be choſen: which

is, the milk of ſome other animal, properly corrected, if it be faulty in any quality. Inſtead of adhering to this road of nature, the preſuming ignorance of women, and, perhaps, in ſome degree, of phyſicians formerly, has introduced the uſe of other ſubſtances very improper for the purpoſe; and rendered ſtill more ſo, by the preparation. Theſe are farinaceous bodies in the form of flour, or bread, and more eſpecially ſugar; which are given either mixt with the milk, or made into the form of pap, panada, *&c.*

The unfitneſs, or rather badneſs of this kind of diet for children, will manifeſtly appear, if we examine ever ſo ſuperficially into the diſorders of children, and the relative property of theſe ſubſtances.

The moſt frequent diſorders of children are, gripings, purgings, continual vomitings of their food, flatulences, *apthæ*, and convulſions. The obvious cauſe of the greateſt part of theſe ſymptoms ariſe from aceſcence, or fermentation of their food: which is owing to the great abundance of ſaccharine juices, or in other words ſugar; to the previous tendency of its condition to thoſe changes; or to the too weak ſtate of the digeſtive power to ſupercede that aceſcence or fermentation, by the proper digeſtive ferment. That the aceſcence or fermentation of the food of children is owing to the preſence of too much ſugar, or to that which is taken, being in a ſtate, tending to fermentation, is evident on the conſideration, that no other vegetable ſubſtance but ſugar is capable of the aceſcent fermentation. It is, therefore, neceſſary to the wholſomneſs of the diet of children, that their food ſhould not abound more than milk, in ſaccharine juice, or

what

what may produce it; and, that the ſaccharine juice ſhould not be in the ſtate, in which it is peculiarly diſpoſed to fermentation. Inſtead of this reſtriction, flour, or bread, is added to the milk, or given with water inſtead of milk: and, though all farinaceous bodies, either contain when taken, or produce in digeſtion, more ſugar than is conſiſtent with the digeſtive power of weaker children, ſugar itſelf is ſtill added, to make a greater accumulation. But what is worſt of all, the compoſition, the child is fed with, is moſtly kept from time to time, of giving it, inſtead of being freſh made: which is, moreover, done even in hot weather, or in the influence of the warmth of ſome fire; ſo that the fermenteſcent principles begin to act, and the mixture to be already in an incipient ſtate of fermentation; which leads to a quick progreſſion of that action, in the bowels of the child.

Experience, as well as theory, manifeſts this truth of the aceſcence and fermentation of ſuch diet in the bowels of children; and of its being the origin of the greateſt part of the diſeaſes to which we ſee them ſubject. Sugar, therefore, though made at preſent a conſtant part of it, ſhould be wholly baniſhed from the diet of children: and bread ſhould be cautiouſly and ſparingly uſed; and never kept long in the milk, or water, with which it is given; but added immediately before it be uſed. The kind moſt proper is ſea biſcuit made of fine flour; being the leaſt apt to ferment.

Dr. Smellie, ignorant of chemiſtry, as to the nature of the fermentation of vegetable ſubſtances, and of the deeper reſearches of phyſiology, reſpecting digeſtion, has been, very unfortu-

nately, led, by the authority of common uſage, into the recommending this deſtructive kind of diet. He ſays, *page* 447, "The food ought to "be light and ſimple in quality, reſembling as "near as poſſible the mother's milk, ſuch as "thin panada mixt with cow's milk, and ſweet-"ened with ſugar: or, ſhould the child be coſ-"tive, inſtead of ſugar, honey and manna "ſhould be uſed." Dr. Smellie is undoubtedly very right here, in the notion, that the diet ſhould be light, and that it ſhould reſemble as much as poſſible the mother's milk. But is that to be eſteemed *light*, which moſt increaſes the reſiſtance of the food to the digeſtive power? Is adding panada to cow's milk, which alone contains all the principles of the proper diet of the child; and much more nearly, in due proportion, than can be produced by ſuch mixtures; rendering it more *ſimple?* Or, is the cow's milk made more *like that of the mother*, by the adding ſugar, manna, or honey, when it already, from the nature of the food, whence it is extracted, contains more ſugar than is generally found in the milk of women? But this holds good yet more ſtrongly of panada, which contains what produces ſtill more ſaccharine juice than any milk; and which, when ſugar is added to it, recedes greatly from the nature of the mother's milk.

In another place of his work, indeed, he ſees this matter in a juſter light; and directs that method for the remedy of theſe diſorders, which ought to be adopted for their prevention.

He there ſays, ſpeaking of the *apthæ*. "The "*apthæ*, or thruſh, is a diſeaſe to which new-"born children are very ſubject, and is often "dangerous, when neglected at the beginning.

"This

" This diſeaſe proceeds from weakneſs and laxity " of the contracting force of the ſtomach and " inteſtines; by which, the aceſcent food is not " digeſted; and from a defect in the neceſſary " ſecretion of bile, with which it ought to be " mixed. This prevailing acid in the *primæ* " *viæ*, produces gripings, and looſe green ſtools, " that weaken the child more and more, de- " prived of its proper nouriſhment and reſt, and " occaſions a fever from inanition and irritation. " The ſmalleſt veſſels at the mouths of the ex- " cretory ducts in the mouth, gullet, ſtomach, " and inteſtines, are obſtructed and ulcerated in " conſequence of the child's weakneſs and acri- " monious vomitings, belching, and ſtools, and " little foul ulcers are formed.

" Theſe firſt appear in ſmall white ſpecks on " the lips, mouth, tongue, and at the funda- " ment: they gradually increaſe in thickneſs and " extent; adopt a yellow colour, which in the " progreſs of the diſtemper becomes duſkiſh, " and the watery ſtools (called the watery gripes) " become more frequent. The whole inner " ſurface of the inteſtines being thus ulcerated " and obſtructed, no nouriſhment enters the " lacteal veſſels; ſo that the weakneſs and diſ- " eaſe are increaſed, the milk and pap which are " taken in at the mouth, paſſes off curdled and " green, the child is more and more enfeebled, " and the brown colour of the *aphthæ* declares a " mortification, and death at hand. Some- " times, however, the *aphthæ* are unattended by " the watery ſtools; and ſometimes, theſe laſt " are unaccompanied with the *aphthæ*.

" In order to prevent this fatal cataſtrophe, at " the firſt appearance of the diſorder, we ought

" to prescribe repeated doses of testaceous pow-
" ders to absorb and sweeten the predominant
" acid in the stomach, giving them from ten to
" twenty grains in the pap, twice or three times
" a day; and on every third night, from three
" to five grains of the *pulv. rhei, jalap. e cretâ*;
" oily and anodyne glysters, with epithems to
" the stomach, may also be administered. When
" these, and every other prescription fail, the
" child, if not much weakened, is sometimes
" cured by a gentle vomit, consisting of *pulv.*
" *ipecacuan. gr.* 1. given in a spoonful of barley
" water, and repeated two or three times, at the
" interval of half an hour between each. When
" the child is much enfeebled, the *oleo-saccha-*
" *rum cinnamoni*, or *anisi*, mixed with the pap,
" is sometimes serviceable. If the milk is either
" too purgative, or binding, the nurse should be
" changed, or take proper medicines to alter its
" quality; or, if the child has been brought up
" by hand, woman's milk may be given on this
" occasion, together with weak broths; but, if
" the child cannot suck, the milk of cows, mares,
" or asses, may be substituted in its room, di-
" luted with barley water."

Dr. Smellie here, very properly, assigns the cause of all these disorders to the laxity of the stomach, the acescence of the food, and the deficience of bile; directs alkalies and spices for the cure; and orders the milk of cows or asses to be given with barley water, omitting sugar, as the regimen of diet. But certainly, if the acescence of the food and deficience of the bile, which of course results from that acescence, are the causes of those disorders which are so common to children, a diet more accescent than the milk of the mother,

mother, ought to be at all times ſtrictly avoided, as well as when the diſorders are produced: and that farinaceous ſubſtances, eſpecially bread, and ſugar, which is indeed the very matter itſelf in which the fermenting property lies, tends to bring on the aceſcent ſtate which occaſions theſe diſorders, his prohibition of ſuch ſubſtances, under thoſe circumſtances, admits, by the cleareſt inference.

It has, indeed, been frequently aſſigned as a reaſon, by the women, who are in general very tenacious of the cuſtom of giving ſugar to children, that they will not take any food without it, from their liking to its flavour. This may be ſomewhat true of thoſe children who have been habituated to it for ſome time: but is by no means ſo of thoſe which have not: and even, in the caſe of ſuch, as do refuſe unſweetened diet, after they are grown fond of ſugar, a little hunger will overpower their nicety: and, if they be in health, they will eat before there is any danger of their being ſtarved. The quantity they would take of unſweetened food would be leſs at firſt; but that would produce no miſchief: for the exceſs in feeding, in the caſe of children, that are well, lies on the other ſide, in the common management; and occaſions the diſpoſing of more of the food upwards, than they actually digeſt, or apply to their nutrition: beſides the injury done by the overload to the digeſtive ſyſtem; which is, in part, frequently the cauſe of the diſorders we have been ſpeaking of.

The moſt expedient management of children as to diet, therefore, is to give them cow's milk, that has ſtood ſome moderate time; that is, an

hour or two after it has been taken from the cow, diluted with a ſmall proportion of ſoft water; or freſh made barley water, according to the richneſs of the milk, or the facility with which the child digeſts it. Or, if it be inſiſted on to give bread, it ſhould be added to the milk, at the time it is given, and not kept mixt with it. If under this regimen, there appear any leſs degree of the diſorders above enumerated, broth ſhould be given, at intervals, as well as the milk. The broth ſhould be freed from all fat; and a little cinnamon, or mace boiled in it, ſo as to impart a ſlight flavour. Where aceſcence prevails more powerfully, and the preſent ſymptoms require relief, the *magneſia alba* may be uſed: which is preferable to chalk: and a very ſmall proportion of caraway ſeed, powdered and mixt with the milk, may be given, if the child will take it. The uſe of a ſmall doſe of *diacodium* is alſo ſometimes neceſſary, where the gripings are very intolerable to the child, or bring on convulſions. But the more frequent uſe of opiates to ſtill the pain in the bowels, inſtead of removing the cauſe of it, as is much too commonly practiſed by nurſes, is very condemnable: tending to weaken the vital powers of the child; and augment, in a more irremediable manner, the cauſe of the diſeaſed ſtate.

SECT.

SECT. VI.

Of the conduct to be obſerved, when the placenta, *and membranes, or any part of them, remain after the delivery of the child.*

THE proper obſtetricarian conduct, with reſpect to the delivery of the *placenta*, has much divided the opinion of thoſe, who have concerned themſelves with this ſubject. Some few formerly, and others again lately, have maintained, that the coming away of the *placenta* ſhould be intirely left to nature, unleſs in very extraordinary caſes. The far greater number, on the other hand, and, among them, moſt of the lateſt writers, as Exton, Smellie, and Roderer, direct the delivery of it, by means of art if it do not come forth with, or quickly after the child: and, indeed, this notion has prevailed ſo much among practitioners, at leaſt, till within a very ſhort time, that it was thought an unpardonable neglect, or a proof of contemptible want of ſkill, for the midwife, or *accoucheur*, not to thoroughly *cleanſe the womb*, as it was called, before the delivered woman was left by them. Dr. Aſtruc has acquieſced in the general notions, and practice, as to this point; and has adviſed the conſtant delivery of the *placenta*, by art, where it does not happen ſpontaneouſly: ſupporting the propriety of doing it, by the ſame vulgar reaſons, that have been in general alledged for it.

Notwithſtanding this prevalence of the opinion of the neceſſity of the violent delivery of this *placenta*, where nature does not immediately

ately expel it, the practice is a very bad one: and has, perhaps, been productive of more miſchief to the women on whom the art of midwifery has been exerciſed, than has been occaſioned by all the other errors of practitioners, or, indeed, natural accidents taken together. That this muſt have been the caſe, may be ſhewn, as well from the conſequences of ſuch a conduct, deducible from an examination of the nature of the parts, and the diſorders to which they are liable, relatively to ſuch violence, as from the error and falſity of the reaſons, and reſpective ſuppoſition of facts, which have originally led to its introduction, or been urged in juſtification of the perſeverance in it. Theſe errors, and wrong belief of facts, took their riſe in former times, from inaccurate obſervations, not diſtinguiſhing matters of a very different nature from each other: on the ſubſequent confuſion of cauſes: and on an ignorance of the true ſtructure of the relative parts, or the particular mode in which they performed their offices; and the conſequential obtruſion of ſpecious, though falſe *hypotheſes*, with reſpect to them. More cloſe and judicious inveſtigations of the true conformation and uſe of theſe parts, elucidated by injections more ſkilfully managed, have, however, now manifeſted the error of the ſpeculative parts of theſe former notions; and conſequently eſtabliſhed a certainty, that the practical concluſions, drawn from them, muſt be wrong.

On that foundation, have been various reaſons advanced, by writers, in favour of the conſtant delivery of the *placenta*, by means of art, where it does not immediately come away of itſelf: and, if the facts on which they were built had

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been true, they would have been very valid. Theſe are the principal of them: which, I ſhall, in their order, ſtate, and refute.

That the *placenta*, if it do not come away with, or ſoon after the child, is ſubject to be retained in the *uterus*; and will frequently not come away at all, or till it has produced ſome bad diſorder.

That the whole, or any part of the *placenta*, or membranes, remaining thus in the *uterus*, the following ill conſequences will be the reſult.

An hœmorrhage will enſue; becauſe, the veſſels of the umbilical cord, communicating with thoſe of the *uterus*, ſo long as any adheſion of one to the other continues, a diſcharge of that blood, which, during the union of the child with the *placenta*, would paſs to it, will be made from the end of the cord; or the part of the *placenta*, where the cord has been divided from it, in caſe it be torn off, as frequently happens.

The *placenta* itſelf will putrefy, and in conſequence of its own putrefaction kill the woman; or, at leaſt, bring on putrid fevers, ulcers in the *uterus*, &c.

Or, otherwiſe, that the *placenta* maintaining its adheſion to the *uterus*, will not putrefy; but, preſerving its vital union with it, will continue to grow, even till it attain a great magnitude, and thus become a mole.

That if the delivery of the *placenta* be not immediately performed, it will be ſoon rendered impracticable, by the reſtorative contraction of the *uterus*, which will cloſe the orifice and cavity, ſo as to prevent the admiſſion of the hand for that purpoſe. This, in the manner it is

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ſtated by Dr. Aſtruc, is a reaſon, againſt any delay at all, that can be avoided. As he deemed it neceſſary, where ſuch delay is unavoidable, to keep, for even a quarter of an hour, or longer, the hand in the *uterus*, to prevent its cloſing.

Theſe are the reaſons, which have been given, why the conſtant delivery of the *placenta* is ſuppoſed to be an advantage or ſecurity to the woman; but there is another, which has been urged as a juſtification of it, that relates to the intereſt of the practitioners; which is, the danger of injuring their reputation, if bad conſequences, even *from any other cauſe*, follow the omiſſion of it.

Dr. Aſtruc himſelf has fallen into the ſame miſtaken notions as are here enumerated, and peremptorily directs the delivery of the *placenta* in more than one part of this work; though without enumerating, in the ſame places, the ſeveral reaſons. But ſome of them particularly, as we have above mentioned, what regards the converſion of the *placenta* into a mole, may be found in other parts of it: and moſt of the reſt, in his *Treatiſe on the Diſeaſes of Women*, in ſpeaking of the origin of the diſorders of the *uterus*.

He is, as we have above mentioned, countenanced in this, by moſt other, as well later as former writers; who impute the ſame ill conſequence to the retention of the *placenta:* and Dr. Exton, one of the lateſt Britiſh writers on this ſubject, roundly ſays: "The infant being "born; the *placenta*, or after-birth, being now "quite uſeleſs, muſt alſo be brought away; "otherwiſe, *by putrefying, it will occaſion the "death of the mother.*"

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The reaſons on which this miſtaken notion, of the neceſſity of delivering the *placenta* is founded being thus ſtated, I will examine them in the light which will beſt ſhow, they have no foundation in truth, or nature: and, I will afterwards endeavour to make it appear, that it is not, from theſe arguments of a negative kind only, but from the cleareſt principles affording poſitive concluſions againſt it, this practice ought to be rejected.

The firſt reaſon, "that if the *placenta* do not "come away with, or ſoon after the child, it is "ſubject to be retained in the *uterus* till it pro-"duce ſome bad conſequence," is a groundleſs ſuppoſition. Nature has inſtituted a proper cauſe for the ſeparation of the *placenta* from the *uterus* in the ripe ſtate of pregnancy, on the ſame principle, as the ſtones, or other kind of ſeeds, ſeparate by maturity from the pulpous part of fruit, when it is fit, according to the reſpective generative œconomy, they ſhould be ſhed. This maturity is not, indeed, always perfected, with relation to the *uterus*, before labour; which, from many cauſes, eſpecially as to women in the ſtate of civilized life, is prematurely brought on. But it will, even in theſe caſes, happen in the due order of nature ſhortly after the birth: and the *uterus*, being then freed from the volume of the child, which kept it in a ſtate of diſtenſion, contracting on that account, in a very great degree will aſſiſt this other prior cauſe of ſeparation: and overcome the adheſion: to which effect, the evacuation of the blood contained in the *placenta*, if the umbilical cord be cut, and it be ſuffered to flow out, will alſo contribute. The *placenta* being thus ſet looſe

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in the *uterus*, efforts will, on the ſame inſtinctive principle, as in all other ſimilar circumſtances, be brought on for its expulſion. Obſervations would evince the almoſt conſtant ſpontaneous delivery of the *placenta*, and membranes, or any remaining parts of them, within a ſhort time after the birth of the child, but that very few opportunities are ſuffered to preſent themſelves, from the almoſt univerſal interference of art to accelerate it: and this has been one great cauſe of the eſtabliſhment and long continuation of the general error of opinion in this point, which almoſt all the modern authors, except Ruyſch, have mentioned. Dr. Smellie, indeed, though he did not make a proper uſe, as we ſhall ſhew below, of that knowledge, was ſo well aware of this truth, that, in ſpeaking of it occaſionally, he uſes this expreſſion; "becauſe it is *poſſible* that "the *placenta*, ſhould be ſometimes, though "*ſeldom*, retained ſeveral days." The expreſſion is not very accurate; but it certainly implies, that the *placenta* will almoſt always come away of itſelf; as there is only a *poſſibility*, of its being *ſometimes*, *though very ſeldom*, retained *ſeveral days*: and, he further obſerves, "that ſome of the antients did not believe, "that any danger happened on this account, "in labours, oftner than once in a thouſand "times."

In demonſtrating the error of the opinion, that the *placenta*, will not in almoſt every inſtance come away of itſelf in a few hours; or in ſome very extraordinary caſes, at furtheſt in a few days; we deſtroy all the reaſon for a forcible delivery, grounded on the ſuppoſed conſequences of a retention of it: and therefore,

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by due inference, this includes a refutation of all the other reaſons above enumerated. But we ſhall, moreover, further ſhew, that the very ſuppoſition of thoſe conſequences following, even admitting the *placenta* or part of it were to remain in the *uterus*, either adhering, or ſeparated, is equally erroneous with the opinion as to the retention itſelf. Nor are there any other bad conſequences, except in the inſtance of floodings, which reſult from a detention of the *placenta*: as it would ſoon, in almoſt all caſes putrefy, and come away in time: the effects of which, to the woman, would be rather incommodious than dangerous. And in thoſe very few caſes, where it does not come away, nor putrefy, forcible delivery is more than in any, improper: as we ſhall ſee particularly below.

The firſt of theſe ſuppoſed ill conſequences above mentioned, attending a detention of the *placenta*, is, *that an hæmorrhage would be produced from it, on the preſumption, that there is a communication of blood from the* uterus, *into thoſe veſſels, which are ramifications of the umbilical vein and arteries.* But that the ſuppoſition of an hœmorrhage from this cauſe is erroneous, we have before evinced; in ſhewing, there is no ſuch communication: and that, if the end of the part of the cord which remains conjoined to the *placenta* was left untied, in any ſtate, there would be no effuſion, further than of the quantity of the blood before received from the child, which happened to be in the umbilical veſſels at the time of the cord's being cut. There is, indeed, another reaſon why the retention of the *placenta* does, in ſome particular caſes, promote an uterine hœmorrhage after the birth

birth of the child: and which, when it is in a great degree, conſtitutes almoſt the only caſe, where the forcible delivery is proper, as we ſhall ſee below. This is the preventing the more perfect contraction of the *uterus*, and conſequential cloſing of the orifices of its veſſels, which were divided in the ſeparation of the *placenta* from it, as far as the ſeparation has gone. But ſuch an hœmorrhage rarely continues long, after the birth of the child in a natural labour, in any manner that renders extraordinary meaſures neceſſary to remedy it. For the ceſſation of the efforts, and that great degree of reſtorative contraction, which the *uterus* does undergo, even while the *placenta* remains in it, with the effect of the general gradual contraction, which all divided blood veſſels have in common from their own natural diſpoſition, are ſufficient to reduce the effuſion to ſuch limits, as inſures the ſafety of the patient from any dangerous exceſs of the diſcharge. In the caſe of conſiderable lacerations of the *uterus* in the labour, or where there is a ſchirrous or carcinomatous ſtate of the *uterus*, as is ſometimes found, the hœmorrhage will obſtinately continue; and the preſence of the *placenta* may impede its ceſſation: but in theſe caſes, there are frequently preternatural adheſions of the *placenta*, or *chorion*, and great care muſt be taken to diſtinguiſh them; or the caſe will be fatally aggravated, inſtead of relieved, by the delivery. The ſecond of the ſuppoſed ill conſequences from the retention of the *placenta* is, that, *if the whole, or any part* be left in the *uterus*, it *will putrefy, and deſtroy the woman.* That it will moſt generally putrefy, if it be not forced away by delivery, but left in the *uterus*, muſt be allowed;

allowed; but that any dangerous conſequence will thence enſue, may, as above aſſerted, be well denied. The putrefaction, to a certain degree, of any redundant body, that ſhould be thrown off, is a neceſſary ſtep of the general proceſs, by which nature performs the ſeparation of ſuch parts as no longer continue to belong to the vital ſyſtem, but would be offenſive to it, from the others which do. And, in this caſe, it is particularly effectual to that end: becauſe, a ſlight degree of putrefactive change will looſen the *placenta* from the *uterus*; and alſo divide the different lobes of it from each other: ſo as by this means to facilitate their *exit* through the orifice of the *uterus*; which will then as eaſily and certainly happen, as that of the clots of blood frequently formed in the *menſes*: and from the ſame extruſive power in the *uterus*, exerted on the irritation of any foreign body. That this putrefaction, in the degree ſufficient to cauſe the diſcharge of the *placenta*, with few and ſmall, or even with no ſenſible efforts, or labour pains, frequently happens without the leaſt inconvenience to the woman;—that, in others, from a longer continuance, it only incommodes them with the diſguſt of a fœtid diſcharge;—or, at moſt, that in ſome very few inſtances it brings on feveriſh, or other diſorders not fatal; is evinced from obſervations of indiſputable authority. But, where are the inſtances, well atteſted, of the putrefaction of the *placenta* occaſioning the death of the mother? On a careful examination of the reports of ſuch caſes, I find none ſuch: and, though I make no doubt, but that the death of the woman may, in ſome inſtances, have attended the pu-

trefaction of a retained *placenta*; and that ſome accounts of ſuch may have been found; yet it may be reaſonably imputed in all thoſe caſes to concurrent cauſes: as ſuch a retention does not happen, but where there is ſome conſiderable defect, or diſorder in the habit, preventing the natural œconomical proceſs of parturition. The chance of a putrefaction of the *placenta* is, therefore, ſo little, as it ſo rarely remains in the *uterus*, even where the expulſion is wholly left to nature, a ſufficient time to admit of it; and the danger *from* a putrefaction likewiſe, ſo little, even where ſuch may happen, that it does not in any manner counterbalance thoſe inconveniencies, and hazards which reſulting, on many principles, from the forcible delivery: and ought not, therefore, to be allowed as any reaſon for a conſtant practice of it.

The third reaſon alledged in favour of the inſtantaneous delivery of the *placenta*; that, *when it is long detained, it may ſometimes not putrefy*; *but, if it adhere to the* uterus, *will continue to grow, even to a great magnitude*; *and will become a mole*; is already anſwered by a denial of the exiſtence of ſuch growth of the *placenta*, and conſequential formation of moles, in the foregoing obſervations, on the nature and production of moles in general. In thoſe obſervations, juſt reaſons are advanced for rejecting ſuch an opinion of the cauſe of thoſe uterine ſubſtances which have been called moles: and, whoever will examine the writers, who have given any faithful account of the ſuppoſed moles of conſiderable magnitude, will find them either to be aſſignable to polypous, ſarcomatous, carcinomatous, or other excreſcences of the *uterus* itſelf;

ſelf; or to coaleſcences of clots of grumous blood, or of thoſe concreted ſeparations of blood that are called the fibrous parts of it; which laſt are ſometimes compreſt into a round form, and firm conſiſtence, much reſembling conceptions in their figure: and not ſeldom formed round real abortive conceptions, of which, they conſequently increaſe greatly the apparent ſize. As this reaſon, for the forcible delivery of the *placenta* in all caſes, taken from the ſuppoſition of the hazard of moles being produced from the detention of it, is, therefore, founded on a falſe fact, it cannot be admitted to have any validity.

The laſt reaſon, and which Dr. Aſtruc urges in particular, as an argument for a quick delivery of the *placenta* in all circumſtances, is, that the *uterus* contracting, there is, as he ſays, "reaſon to fear, that the orifice of the *uterus*, contracting in proportion, may cloſe up all the entrance into the *uterus*." And he ſeems to imagine, this will very ſoon happen: for he further ſays, "that this inconvenience may nevertheleſs be prevented, by holding, for a quarter of an hour, the hand in the orifice, to keep it open." But the notion of ſuch a quick contraction of the *uterus*, is wholly a miſtake in point of fact: for though ſpaſmodic contractions do ſometimes happen, not only in the orifice of the *uterus*, as he himſelf has mentioned, but alſo in various parts of the length of the uterine cavity; yet that natural permanent contraction of the *uterus*, which is reſtorative of its unimpregnate ſtate, does not quickly come on to ſuch a degree, as not to admit the hand to paſs into the *uterus*. For, as Dr. Smellie rightly obſerves, "the mouth of the *uterus* is as eaſily di-

" lated ſome hours after delivery as at any other " time," and as he ſays in another place " the " *uterus* will not cloſe ſo, but that the hand may " be introduced ſome hours afterwards with e- " qual, and ſometimes with leſs inconvenien- " ce, and hazard, on account of a ſlight degree " of inflammation, or ſpaſmodic contraction." He might, indeed, have gone much further: for, not only the next day, but even after a longer time, when the *placenta* is retained, the hand may be introduced, in particular ſubjects, without any extraordinary forcible dilatation; as a multiplicity of obſervations ſhew. In ſome caſes, moreover, where efforts are afterwards, at a diſtance of time, ſpontaneouſly made for the delivery of the *placenta*, this may be done with more eaſe than immediately after the birth of the child. This fear of the contraction of the *uterus*, preventing the coming away, or the taking away by manual operation, the *placenta*, ſome time after the delivery of the child, is not, therefore, a juſt reaſon againſt giving time to nature to do her own buſineſs. Since it is certain, that in moſt caſes, where ſhe delays it, ſhe will nevertheleſs perform it in the end; and, if it were not proper on other accounts to give a longer ſpace, there would yet be no reaſon of this kind, for not waiting a few hours; as the aſſiſtance may be equally well adminiſtered then. The expedient propoſed by Dr. Aſtruc, of keeping the hand within the orifice of the *uterus*, to prevent its cloſing, appears, therefore, on the ſame account, wholly unneceſſary; and it is not only needleſs, but likewiſe improper, on other accounts. Such a continuance of diſtenſion and irritation, in the neck of the *uterus*, naturally

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very ſenſible and tender, and rendered more ſo from ſome degree of inflammation, which the violent dilatation and friction by the child in the labour, muſt have occaſioned, cannot fail to be very troubleſome and painful, in all caſes to the woman; and, in ſome, would bring on nervous and ſpaſmodic affections of a very injurious kind. Moreover, inſtead of giving that interval of repoſe before the delivery of the *placenta*, and opportunity for the *uterus* to contract, which are propoſed by him to be thence gained, it would have the oppoſite effect. For ſuch a continued ſtate of pain and irritation would both prevent the eaſe, and reſt of the woman; that can not take place, till there be a ceſſation of the pains and efforts; which would often be kept up by this irritation.

I have, above, mentioned an additional reaſon, to thoſe which Dr. Aſtruc has given, why the *placenta* ſhould be always delivered before the woman be left. It is not founded on any regard to the patient, but on an attention to the intereſt and reputation of the operator: and will, when examined, I am afraid, ſtand on as bad a footing as to morality, as the others before diſcuſſed do, as to phyſiology. One could ſcarcely believe, that a conformity to an acknowledged prejudice and error, attended with trouble, pain, and great riſque to the patient, could ever be taught, as a neceſſary part of the office of the profeſſors of any branch of the medical art: yet, this abſolutely is the caſe; as appears in the particular in queſtion, from Dr. Smellie's own words. He ſays in one place: "For the "moſt part, in ten, fifteen, or twenty mi- "nutes, more or leſs, the *placenta* will come

" away of itſelf: and though ſome portion of " it, or of the membranes be left in the *uterus*, " provided no great flooding enſues, it is com- " monly diſcharged in a day or two, without " detriment to the woman. But at *any rate*, *if* " *poſſible*, all the ſecundines ought to be ex- " tracted at once, before you leave your patient, " *in order to avoid reflections*." He afterwards ſays again, below, that the delivery of the *placenta* ſhould not be delayed too long, " becauſe " it is poſſible, that the *placenta* ſhould be ſome- " times, though ſeldom, retained ſeveral days. " For if the *uterus* ſhould be inflamed from *any* " *accident*; and the woman be loſt, the operator " will be blamed for leaving the after-birth be- " hind." After ſtating here, that the *placenta* will come away of itſelf, for the moſt part, in a ſhort time; and that, though ſome portion of it, or of the membranes be left in the *uterus*, they will, unleſs a great flooding enſue, be commonly diſcharged in a day or two, *without any detriment* to the woman: after making it only *a poſſibility*, ſuch as ſeldom can take place, that the *uterus* ſhould be retained ſeveral days;—after ſtating two obſervations, inſerted in *caſes* i. *and* ii. *vol.* ii. in which he relates, that he deſtroyed one woman, where there was a preternatural adheſion of the *placenta*, and ſaved another, by forbearing it on the ſcore of that warning;—and after ſupporting theſe, by other quoted caſes of fatal conſequences, from the improper delivery of the *placenta:* he ſtill ſays, " that, *at any rate*, if poſſible, all the " ſecundines ought to be extracted at once, be- " fore you leave your patient, *in order to avoid* " *reflection*." " For," as below, he further adds, " if the *uterus* be inflamed, *from any accident*; and " the woman be loſt, the operator will be

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"blamed for leaving the after-birth behind." This is the doctrine he inculcates, to his pupils and readers, with reſpect to their conduct, as to delivering the *placenta*; in which, he appears to be wholly determined by a ſuppoſed expedience of ſubmitting to vulgar prejudice from motives of intereſt. But, ſurely, it would be both more fair and honourable to ſtrive to overcome this prejudice, by adviſing a general combination, to act openly and profeſſedly contrary to it, and to ſhew thence, by the conſequence, the rightneſs of ſuch a conduct; than by giving way, and conforming to it, to countenance and perpetuate it, out of an effeminate, chimerical, timidity of being cenſured by ſome ignorant ill-deſigning midwife. Is character peculiarly, in this profeſſion, to be ſupported only by art? And, does reputation in it depend ſo much on an *implicit ſubjection*, to the abſurd opinions of the vulgar; that *to avoid reflections*, an *accoucheur* muſt do conſciouſly wrong? Such reaſons ought never to be advanced by a teacher of the medical art: for, they would, if admitted to be right, cover, or gloſs over every degree of mean artifice and low deſign. For where ſhall we ſtrike a line, if we lay down, that regard to reputation, and fear of unmerited cenſure, and not a ſtrict regard to the ſafety and welfare of the patient, are to be moral motives in medical practice? Certainly, eſtabliſhing ſuch a maxim is the recommending an illaudable proſtitution of the profeſſion. I am ſorry to ſay, that though I think Dr. Smellie was a good man, and ſuperior to any writer before him on the ſubject of midwifery, this is not the only paſſage in his work, in which ſuch a regard to the craft of it is re-

commended, as is not very ſuitable to the dignity of a liberal profeſſion. It is much to be regretted, however, that all ſuch ſentiments ſhould not be exploded by the practitioners of an art, which, with reſpect to the male office in it, requires liberal and learned qualifications: and, that they ſhould not ſtrenuouſly think, the credit of it ought to be ſupported, by purſuing the dictates of probity, humanity, and a manly adherence to the juſt methods of practice, rather than by concealments and accommodations to popular prejudice, folly, infatuation, and the cabal of old women: and the more, becauſe this branch, which ought to be honourable, as well from its high utility, as the requiſite talents, has always lain under a contempt, not due to itſelf, however it may be to the ignorance, illiberality, and meanneſs of many of its profeſſors: who ſeem in the moſt literal manner, to have ſtriven to keep up to their old Engliſh name of *men-midwives*.

We have thus ſeen, how erroneous, and weak, the ſuppoſitions are, which have been alledged for authorizing the practice of the conſtant forcible delivery of the *placenta*, when it does not, in a very ſhort time, come away of itſelf: and we will now diſplay what the poſitive reaſons are, why it ſhould never be done, but in caſes of ſtrict neceſſity. But, as it muſt be allowed, that there is ſuch a neceſſity for it, in ſome particular caſes, though they are few, it will be previouſly proper, in order to the comprehenſion of the full ſcope, and force of theſe reaſons, to ſtate more particularly from what circumſtances this neceſſity may ariſe. The forcible delivery of the *placenta*, as has been be-

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fore obſerved, principally becomes neceſſary, in thoſe few inſtances where it is ſo, from the effect, its continuance in the *uterus* may have with relation to the ſupport, or augmentation of a dangerous uterine hœmorrhage. In general, floodings, even though conſiderable during the labour, will ceaſe in a moderate time after the birth of the child; notwithſtanding the *placenta*, and membranes, or any part of them remain behind: the contraction, which the *uterus* is even then capable of, and the ceſſation of the efforts, being ſufficient for that effect. It does, nevertheleſs, in ſome few caſes happen, from laceration, or diſeaſe of the *uterus*, that the diſcharge is more obſtinate; and will not be checked, by any means, without a greater degree of contraction of the *uterus*, than it can have while any foreign body remains in it: and, perhaps, the preſence of the membranes, and *placenta* alſo, promote the flooding, in ſome very rare inſtances, by their irritation: which, in ſuch caſes, excites frequent efforts, that both force the cloſing veſſels, and prevent the general contraction of the *uterus*. In ſuch circumſtances, where the hœmorrhage does not give way to reſt, anodyne, or narcotic medicines, and aſtringent applications, a neceſſity of courſe ariſes of removing the, at leaſt auxiliary, cauſe, by delivering forcibly the *placenta*. Becauſe the hazard of miſchief, and the certain inconvenience, for there always will be ſome, are not to be put in compariſon with thoſe, which the continuance of the flooding in ſuch caſes occaſions. In theſe inſtances, therefore, where the profuſeneſs of the diſcharge endangers the life of the woman, it is unqueſtionably proper to deliver

deliver the *placenta*, where it can be done without ſuch violence, as muſt greatly injure the *uterus*. Perhaps, to theſe, may be added, ſome very rare caſes of dangerous convulſions, owing to the irritation of the *placenta*, or membranes, on the *uterus*, or its orifice; in which it would be well to deliver them. But theſe are exceedingly few: as in moſt of ſuch inſtances, the *placenta* would be ſoon naturally delivered; or the convulſions themſelves would ceaſe on bleeding in the arm, and the uſe of narcotics. It is, with theſe exceptions, conſequently the following reaſons hold good againſt the forcible delivery of the *placenta:* and with this limitation, therefore, the prohibition of it muſt be underſtood to be taken.

The poſitive reaſons againſt the forcible delivery of the *placenta*, are grounded on a fact we had occaſion, briefly, already to premiſe: which is, that nature will, in almoſt all caſes, do her own buſineſs in this point, without interpoſition of art. Whence, every inconvenience and miſchief that may reſult from it, muſt be taken in the account with its full weight againſt it.

In anſwering the above ſtated reaſons, we ſet out with ſhewing, that the *placenta* will moſtly be ſeparated, and come away with the child, from the general principle of *ſeminal maturity:* and that, if this principle does not fully take place before, it will after the birth of the child be aided by the contraction of the *uterus*, and the evacuation of the blood out of the umbilical veſſels of the *placenta*, when ſuffered to be diſcharged. Theſe combined cauſes will never fail ſoon to occaſion a ſeparation, and delivery, where there is no adheſion, but through

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the natural union of the veſſels of the *uterus* and *placenta*. There are, however, ſometimes preternatural adheſions from accidental and morbid cauſes, that retard, or prevent the early and due ſeparation. In ſuch caſes, nature will, nevertheleſs, in a longer time, moſt generally ſuperſede, by the ſame principles, ſuch interfering cauſes: and looſen the *placenta* from the *uterus*: and where that cannot be effected, the nutrition being taken away by the ceſſation of the intercourſe with the child, and the cloſing of the greateſt part of the veſſels that communicate with the *uterus*, a putrefactive ſtate is brought on, that ſoon deſtroys the remaining continuity, not only betwixt the *placenta* and *uterus*, but betwixt the diviſions or lobes of the *placenta* with each other; the parts of which, thus divided, are fitted to come away by themſelves, or with the *menſes*. There are ſome very few inſtances, indeed, where the *placenta*, continuing to adhere, has not ſoon putrefied, but aſſumed an indurate conſiſtence: but here forcible delivery is more peculiarly improper, as this ſchirrous-like union cannot be overcome without occaſioning an immediately fatal, or at leaſt very injurious laceration of the *uterus*. As we ſee happened to Dr. Smellie, in the caſe recited by him, *page* 390 of his collection.

The firſt poſitive reaſon againſt delivering the *placenta* by force, where it is not abſolutely neceſſary, is, that it muſt of courſe occaſion pain, trouble, and fatigue, in a greater or leſs degree, to the woman, at the time, when generally there is great want of quiet and reſt: which, where the women are much exhauſted,

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may be very detrimental, and dangerous: and ought therefore to be avoided.

The ſecond reaſon is, that a violent ſeparation of the *placenta* cannot be made, without dividing the veſſels, which paſs from the *uterus* into the *placenta*, before nature has duly contracted and cloſed them; and, alſo, rupturing, in a greater or leſs degree, ſome of the proper veſſels of the *uterus*; which muſt occaſion, in proportion, an increaſe of the flooding. The increaſed diſcharge from this cauſe, will, moreover, be attended with ſuch circumſtances, as render it more obſtinate than that which naturally happens: as theſe ruptured uterine veſſels, which are not belonging to the *placenta*, will not be equally affected by the reſtorative change of the *uterus* after delivery. This has frequently been a very troubleſome conſequence of the injudicious practice of haſty and unneceſſary deliveries of the *placenta*; and is the moſt immediate, as well as moſt common bad effect of it.

The third reaſon is, that the forcible ſeparation of the *placenta* tears the *proper* interior membrane, or ſometimes even the pulpous ſubſtance of the *uterus*; which muſt occaſion more or leſs inflammation, with proportionable hazard of fever and mortification; and is liable to cauſe, according to the degree and habit of the patient, future ulceration, ſchirroſity, cancer, obſtinate *fluor albus*, and all thoſe diſeaſes, which wounds or hurts of the *uterus* may give riſe to.

The fourth reaſon is, the pulling or dragging the *uterus* in this unſupported ſtate, either by the hold of the umbilical cord, or by the *placenta* itſelf, ſtretches and injures the ligaments; and ſometimes breaks them; which occaſions a fu-

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ture tendency to bearings down, and deſcenſuſſes of the *uterus*; or, where the violence is great, or there is a prediſpoſition, even immediately cauſes a *prolapſus* of an incurable nature. This kind of miſchief, in a greater or leſs degree, very frequently happens: as the pulling away the *placenta* by the cord is a conſtant practice. For where gentle pulling does not effect the purpoſe, the midwife, dreading to fail in this, as ſhe imagines, eſſential part of the duty of her office, drags with impatience and force; which cannot be done without the hazard of, or actual bad conſequence here mentioned: and when, as ſometimes happens, the cord breaks away from the *placenta*, the ſame, or a more injurious violence is exerciſed, by the hold of the *placenta* itſelf in the cavity of the *uterus*; where the dexterity of making a gradual ſeparation by the edge, which requires ſome ſkill and expertneſs, being wanting, a groſs miſapplied force is, for the moſt part, exerciſed, by downright pulling forwards, to overcome the whole of the adheſion together, and drag away the *placenta*.

The fifth reaſon is, that the violent dilatation of the orifice, or of the interior part of the *uterus*, which are frequently in a ſtate of ſpaſmodic conſtricture after the delivery of the child, may occaſion great damage to the *uterus*, by bruiſing the orifice, or lacerating its edges; or even the interior part of the *uterus* itſelf, where ſuch extraordinary contractions ſometimes happen; and ſtraiten, in various degrees, particular places in the length of its cavity.

The ſixth reaſon is, that, beſides the laceration, and diſtenſion of the *uterus*, by the force exerciſed

exercised on the *placenta* itself, the operators are liable to scratch, or cut the *uterus* with his nails, or make contusions with their hand: and in the case of midwives, or *accoucheurs* of small abilities, there is, as Dr. Astruc himself observes, a danger of mistaking, and laying hold of some part of the *uterus* itself, or some excrescence from it, instead of the *placenta*; as has sometimes happened, with fatal or irremediable consequences.

These are the several reasons against the constant delivery of the *placenta*, as directed absolutely by Dr. Astruc;—made necessary, to *avoid reflection*, by Dr. Smellie;—and, till very lately, for a considerable time held as an almost universal rule of practice here. It appears, nevertheless, in the most clear light, that they ought to weigh against its being done, except where there is a clear necessity for it, on the principles we have above explained: there being no advantage, good, or security, attending it, to counterballance the many inconveniencies, or mischiefs it does, or may, bring on. The conduct which should be persued in this matter, therefore, is, where the above-mentioned necessity from excessive floodings, or convulsions, does not prevail, to wait for the natural expulsion of the *placenta*, and membranes; or of such part of them as may remain behind the rest; or, at most, if by finding them brought down to the orifice, the separation appear completed, and the *placenta* loose, to draw it gently forth by the cord, if it come easily; without pulling with such force, as might tear or break the vessels, which form the adhesion, if any remain. This is the whole, with respect to this matter, that should be permitted to the midwife in the natural births.

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The *accoucheur*, after more difficult and laborious deliveries, where the orifice of the *uterus* is in ſuch ſtate of diſtenſion, that the hand may be introduced without a forcible dilatation of it; and where, perhaps, it ought to be introduced, to examine the condition of the *uterus*, with reſpect to the injuries it has received; may go ſomewhat farther. When, in ſuch circumſtances, the *placenta* is found looſe, or with a ſlender degree of adheſion, he may with propriety bring it out with his hand, and free the *uterus* from the office of delivering it by efforts; which, in this weakned ſtate, it is leſs able to exert; and which, indeed, it ſhould be then prevented, as much as poſſible, from exerting. When, in caſes of exigence, of that kind we have mentioned, more is to be done, it ſhould not be undertaken by the midwife, where the aid of any ſkilful man can be obtained. As not only the operation itſelf, but the ſtate of the patient, determining the neceſſity of its being performed, requires all the abilities, that can be poſſeſſed by the greateſt proficient in this branch of the medicinal art.

SECT. VII.

Of the treatment of women after delivery, in common caſes.

DR. ASTRUC is very brief in his directions on this head: he ſeems, in ſo doing, to have omitted certain particulars, very proper to be known to midwives; to have adviſed ſome in a way not the moſt judicious; and to have recommended others, not in the leaſt requiſite in common caſes. He orders, not only when the *vulva*

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is ſwelled, but in all other caſes, to apply to it, in order to relax the lips and entrance into the *vagina*, "a cataplaſm, made with one or two "yolks of eggs beaten up with oil of ſweet al- "monds, and moderately boiled in *balneo mariæ*, "in form of an omelet; which muſt be renewed "four or five hours after, if judged to be "proper." In caſes, where there is no extraordinary injury done to the *vulva*, nor conſequential inflammation, there is not the leaſt occaſion for any medicinal application; as the ſoreneſs and ſwelling will ſoon abate of themſelves: and where there is ſuch occaſion from great inflammation, ſurely there are forms more efficacious and expedient, than that of an *omelet*. The common emollient cataplaſms of the pulpous roots, with milk and oil; or fomentations, with warm water; would be much more effectual for removing any inflammatory tenſion, as well in this, as other caſes, than ſuch a piece of cookery.

The two ounces of oil of ſweet almonds, beaten up with an ounce of capillair, which he ſays is commonly given, *with a view to moderate the colic*, is not more neceſſary nor proper than the omelet; as the ſyrup is not ſo likely to relieve in the colic of this kind, as to increaſe it: and, indeed, if the uſes of the two were changed, and this mixture applied to the *vulva*, and the omelet eaten, they would ſeem better adapted to their reſpective intentions.

Inſtead of this cataplaſm, a piece of ſoft linen well warmed, and folded in ſeveral doubles, is the proper application to the *vulva*: or, in caſe of great exterior ſoreneſs, another ſingle piece, ſpread with the *unguentum album*, *epulatic cerate*,

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or even with ſimple pomatum, may be firſt laid on.

One of the principal omiſſions made by Dr. Aſtruc is, the not declaring that it is proper, immediately after delivery, to be very careful the woman ſhall be kept in a lying poſture: as the raiſing her to an erect ſtate, eſpecially when ſhe is already weak and faint; or where the belly is very pendulous from great diſtenſion; may be the occaſion of much inconvenience and danger. Wherever the cavity of the *abdomen* has been widely inlarged, either by a collection of water, or *pus*; or by a conception; and a ſudden void is made, by the removal of the additional maſs; the natural preſſure being removed from the blood veſſels, which paſs through it; while the aſcending veſſels in the *thorax* are contracted by the diaphragm now bearing down, and dragging them with it: whence an unequal diſtribution of the blood is, of courſe, made; which prevents the due quantity from being carried into the veſſels of the head. Hence a lypothymic, or fainting ſtate, is brought on, frequently to a fatal degree, if due care be not taken to avoid an erect poſition, or to ſupport the contents of the *abdomen* by proper external compreſſure. For this reaſon the woman ſhould be kept lying on her back, till it is convenient to apply a proper bandage to produce this compreſſure; which, in the mean time, if ſhe ſhould move, ſhould be ſupplied by the hand of ſome aſſiſtant.

It may be proper, alſo, to remark, that a ſtate of reſt and quiet is very neceſſary, where the ſpirits are greatly hurried, or agitated; or where a ſenſe of fainting is perceived. And, to very irritable women, ſubject to hyſteric com-

plaints, ſome refreſhment, ſuch as the common caudle, or a cup of warm wine with toaſt, if agreeable to the patient, will greatly contribute; into which wine, inſtead of the ſpoonful of nutmeg and ſugar uſually given, ſome ſpice may be added, to check the flatulency, which is apt to be predominant in ſuch habits. As ſoon as the ſtate of the woman will permit it, ſhe ſhould have dry cloaths put on; her belly properly ſecured by a due ſupportive bandage, and herſelf put into the bed in which ſhe is to lie.

Where the previous preparation, and manner of conduct in the delivery, is conformable to the directions above given, *page* 297, as adviſed by Dr. Smellie, the proceedings as to theſe ſeveral matters are to be thus managed, according to his ſubſequent directions. "As ſoon as ſhe "is delivered this ſheet (*that is the ſheet laid in "four doubles under her*) muſt be removed; a "warm ſoft cloth applied to the *os externum*; "and the pillow taken from betwixt her knees. "She then muſt be ſhifted with a clean warm "half ſhift, linen ſhirt, and bed-gown; and "her belly kept firm with the broad head-band "of the ſkirt, the ends of which are to be pinned "croſs each other. Theſe meaſures being "taken, the couch muſt be run cloſe to the bed-"ſide, and the patient gently moved from one "to the other." Or, if there be no couch, and the woman be laid acroſs the feet of the bed, the ſheep ſkin, linen, *&c.* laid to ſecure the bed, muſt be now taken away, and, the woman being moved into her proper place, lengthwiſe in the bed, the bed cloaths, that were rolled up towards the head, are now to be brought over her,

her, as in the uſual manner. It is very proper however, before the ſkirt, which ſerves as a bandage, or till a long towel or doubled ſheet, or ſome kind of roller, be properly fixed, that ſome of the aſſiſtants ſhould keep their hands on the belly of the woman, and hold it firm, or ſupported, if ſhe moves; in order that a due compoſure may be made from the time of the delivery.

It is proper, however, to defer the removing the woman, or ſhifting her at all, where ſhe appears very weak and diſpoſed to ſwoonings; as ſuch a degree of convulſion and fainting may be brought on, as may be immediately fatal. In this caſe, the ſkirt and petticoats ſhould be looſned, and pulled off over the legs; and then replaced by freſh ones well warmed: the ſhirt ſhould have a broad head-band, which, being ſlipt in below, ſhould be brought over the thighs and hips; and a warm double cloth, being laid on the belly, the head-band ſhould be put over it moderately ſtrait, that it may act as a bandage on the belly. The woman ſhould be continued in this way, according to what we have above-mentioned, till ſhe is in a fit ſtate to be moved, in order to the being ſhifted and put to bed.

When this is done, the head-cloaths, if they be wet with ſweating, ſhould be changed as well as the ſhift: and if the flooding be conſiderable, the cloth put over the *vulva* ſhould be renewed as ſoon as ſhe is ſettled in bed; and ſome folds of linen cloth put over it, paſſing under her to preſerve the ſheets. If there be occaſion, a ſheet four times doubled ſhould be alſo laid under the woman; and this, as well as the cloth put over that which is next the *vulva*, ſhould

be renewed as often as appears neceſſary, to prevent her catching cold: but that next the *vulva* ſhould not, in ſuch caſes, be frequently changed; as experience has ſhewn, that nothing more encourages flooding, than the abſorbing action of dry linen brought in contact with the parts.

The woman thus properly ſettled in bed ſhould be ſuffered to repoſe immediately if the weakneſs of her ſtate demand it; or to take ſome refreſhment, if ſhe find herſelf diſpoſed to it. Under the notion of avoiding fever, it has been uſual to keep women extremely low, and give very diluting liquors: but where there is no injury apparently done to the *uterus*; nor ſymptoms of extraordinary inflammation; this method is certainly wrong, when carried to the extreme. In women who are very irritable, nervous, and inclinable to hyſteric complaints, ſuch a method will be certain of bringing diſagreeable ſymptoms: and they will not only be much freer from flatulencies and colics, with variety of attendant ſpaſmodic complaints; but will reſt much better, and be leſs liable to feveriſh paroxyſms, when ſome proper nutritive diet is allowed them, than when the digeſtive ferment is extinguiſhed by too much water, the ſtomach relaxed by it; and the lower inteſtines left to the irritating action of the bile; which, in ſuch conſtitutions, always produces uneaſineſſes and diſorders in a faſting ſtate. This diet may be caudle with toaſt; French barley, or rice gruel; broth, properly thickened with French barley, rice, or grots; for the firſt meal or two: but a little ſolid food, eaſy of digeſtion, as chicken, or veal, may be afterwards allowed; where

where there is extraordinary weakneſs, a febrile ſtate, or violent topical inflammation, that occaſions a proſtation of the appetite, or renders it improper.

Dr. Aſtruc obſerves, that a difficulty of making water frequently happens after delivery; and ſo indeed, ſometimes, does a total want of power. He imputes it to a ſwelling of the *vulva*, which makes a ſtrangulation in the extremity of the *urethra*. This is certainly a miſtake of the cauſe: for if the bladder, and other parts concerned in the ejection of urine, were in a ſtate to act with their full power, they would certainly throw out the urine, with a force much more than ſufficient to overcome this exterior reſiſtance. As he imputes it, however, to this cauſe, he omits mentioning any other remedy but the above-mentioned *omelet*, uſed as a cataplaſm on the *vulva*. This would be very trivial, or rather of no conſequence, in a material obſtruction, or retention of the urine. For which, however, there is, in theſe caſes, an effectual relief, in the uſe of the catheter for drawing off the urine: and which ought to be repeated as often as there may be occaſion. Dr. Smellie, beſides the uſe of the catheter, adviſes the fomenting the external parts with warm ſtupes, and bladders half filled with warm water: and the applying emollient decoctions, as hót as the patient can bear them. But however part of this might be proper for great external inflammations, it can be of little conſequence in removing the real cauſes of difficulty of making water in delivered women, which proceed frequently from a very oppoſite ſtate than that of inflammation. But, happily, whatever this

retention is owing to, where no actual injury is done to the bladder, if temporary relief be given by the catheter, it goes off in a ſhort time.

The difference of the natural ſtrength and habit; and of the modes of life with reſpect to air, exerciſe, and food, take away the poſſibility of laying down general rules, either as to the diet, or the time of riſing from bed, going out, &c. Temperance, both with reſpect to food, and ſpirituous liquors, ſhould be very ſtrictly adhered to: at the ſame time, where no particular ſymptoms give reaſon to prohibit it, a very moderate uſe of gentle cordials, as wine; or rum or brandy, diluted with warm water; to thoſe, whoſe habit, or a lower ſtate of ſpirits, may create a want, may be allowed. Fleſh, dreſſed in the moſt ſimple manner, particularly fowls, and veal, may be allowed alſo, with due reſtriction as to quantity, to thoſe who find appetite to deſire it; and ſtrength of ſtomach to digeſt it without inconvenience. As to riſing from bed, it ought ever to be with care; and rather long poſtponed, than precipitated; as the diſorders, which are brought on by an error in this point, are of very troubleſome, and frequently of fatal tendency. It ſhould not, in general, be before ſome days after the delivery; and then with great caution, to avoid cold, or violent motion; which, however they might be originally, are very dangerous to women in civilized life.

SECT.

SECT. VIII.

Of violent floodings after delivery.

DR. ASTRUC appears, moſt probably from ſome accident, to have omitted ſpeaking in this work of the treatment of thoſe floodings, which frequently happen after delivery; and which make, ſometimes, one of the moſt alarming and embarraſſing, though, perhaps, not in reality the moſt dangerous, accidents, which attend that ſtate. In ſpeaking of the *lochia*, he mentions, indeed, the means, by which the midwives may diſtinguiſh when they are too great, or too ſmall; but ſays nothing further of what is to be done in caſe of exceſs, or an actual hœmorrhage. He occaſionally ſpeaks of the floodings that happen in pregnancy; and which he ſeems to think are almoſt always followed by abortion: but that is a ſomewhat different caſe from hœmorrhages after delivery. In the *treatiſes on the diſeaſes of women*, he ſupplies this chaſm, as it may be juſtly eſteemed here: as floodings after delivery may, with reaſon, be deemed as much a part of the proper ſubject, as thoſe during pregnancy.

In this part of the *treatiſe on the diſeaſes of women*, he directs, for uterine hœmorrhages after delivery, bleeding once or twice in the arm, eight or nine ounces each time; and that the patient ſhould be nouriſhed with incraſſating diet, as rice, gruel, *ſemoule*, and panada, dreſt with weak broth; or ſome yolks of eggs: but if there be a fever, chicken or veal broth, with the hind parts of frogs; or fiſh broth; and, for

the common drink, decoction of comfrey root. Along with this regimen, he orders the uſe of aſtringent medicines; as a bolus of *terra Japonica*, dragon's blood, maſtic, and red coral prepared, in the quantity of ten or twelve grains of each for a doſe; the whole being incorporated with ſome aſtringent ſyrup; as thoſe of dry roſes, plaintain, or myrtle berries: to be repeated morning and evening. But in caſe of more abundant floodings, he adviſes what he calls more efficacious medicines: The firſt of which is, a bolus compoſed of the roots of tormentil, and dropwort powdered, in the quantity of fifteen grains of each for a doſe, made into a bolus, with ſyrup of comfrey: to be taken every four hours. The ſecond is a ptiſan, made with a quart, or two pounds weight of the decoction of comfrey root; to which is added fifty five or fifty ſix drops of the *white water* of Rabel, *ad gratam aciditatem*; and into which, to render it agreeable, two ounces of ſyrup of capillair may be put; which makes it (*as he ſays*) a kind of limonade. He orders, that the patient ſhould be given, every two hours, in the intervals betwixt taking the broth, ſix ounces of this mixture, a little acidulated: continuing the ſame till the flooding be ſtopt; but diminiſhing the doſes, or giving them with longer intervals. He further adds, that it is eſſential to join to theſe remedies a judicious uſe of narcotics, to mitigate the pains of the *uterus*; and to calm the agitations which it ſuffers; and which contribute to keep up, and even increaſe the flooding. He remarks, that great things are not to be expected from external applications: but that, to ſatisfy the women, they may be ſuffered to put

linen

linen dipt in oxycrate on the loins; and to apply aſtringent plaiſters on the belly, or fomentations of the ſame quality.

Excepting the uſe of narcotics, and bleeding, the reſt of this treatment is, in moſt caſes, of little moment. Floodings after delivery, either proceed from actual lacerations, or wounds of the ſubſtance of the *uterus*; or from the diviſions of thoſe veſſels, which united it with the *placenta*: and, poſſibly, from the apertures of the uterine *cotyledones*. The firſt is much more dangerous and obſtinate than the other: but it is difficult to diſtinguiſh them with reſpect to theſe cauſes; except where the operator, in a difficult labour, is ſenſible of ſome particular injury done to the *uterus*. The uſe of aſtringent medicines, taken internally, is rarely of any beneficial conſequence in floodings of this kind: for, as their effect muſt be gradual, in very violent caſes, the miſchief would be done before it could take place; and profuſe hœmorrhages, where there are no lacerations, either ceaſe of themſelves in a moderate time, or give way to narcotics and external applications of aſtringents, which act much quicker.

Where floodings after delivery are not great, they may be left to nature; and ſupporting the patient with nutritive fluids is all that is neceſſary. But where they preſs, opiates may, in all caſes, be advantageouſly uſed: and the ſame method of adminiſtration, with the ſame caution, ſhould be perſued, as was before directed in the caſe of floodings during pregnancy, *page* 292. But notwithſtanding Dr. Aſtruc's remark, that aſtringents externally applied are not of material efficacy; which may be indeed true enough

nough of thoſe before-mentioned; they are the only means, where the flooding proceeds from lacerations, and wounds of the *uterus*, that can be depended on. He himſelf confirms this by a fact, in an account he gives of a country *accoucheur*, who ſaved the life of a woman by an injection of vinegar into the *uterus*, when all other means failed. Rolls of linen cloth dipped into vinegar, and put into the *vagina*, as well as ſpread over the *labia*, are frequently found of very great efficacy in every kind of flooding: and in very preſſing caſes, a roll of linen dipped in vinegar, where the orifice of the *uterus* is ſufficiently open, may be introduced into the *uterus* itſelf. There is another more powerful ſtyptic, and indeed one that never fails to cloſe veſſels, not of very large magnitude, as I have ſeen in the moſt violent bleedings of the noſe or hœmorrhoids; which has been uſed with great ſucceſs in deſperate caſes of flooding. This is colcothar, or, more properly, vitriol calcined to redneſs, the preparation of which may be made, by putting a ſmall quantity into a crucible, or even on an old iron ladle or ſhovel, and continuing in the midſt of a common fire, till the whole become red. The colcothar of the ſhops has been uſed, inſtead of this preparation; but cannot be equally depended on: being, for the moſt part, the *caput mortuum* after the diſtillation of oil of vitriol, which is deprived almoſt wholly of its acid, in which a conſiderable ſhare of its aſtringency reſides. In order to apply this calcined vitriol, a little of it, as ſoon as it is taken from the fire, muſt be put into ſome water in a phial, and well ſhaken with it; and, before any ſediment can ſubſide, the mixture

ture ſhould be poured on a roll of linen, by which means it will be diffuſed on the ſurface of the roll: and this muſt be introduced into the *vagina*, up to the neck of the *uterus*, and there ſuffered to continue. The quantity of the calcined vitriol ſhould be ſmall, unleſs where it undergoes a longer calcination: as it is extremely auſtere and ſtyptic, and ſomewhat corroſive. The uſe of vinegar, as an injection, and of calcined vitriol, in the manner here directed, are both proper to be tried in caſes, where there is extreme great danger from the flooding; as both have been uſed with ſucceſs as to their ſtyptic intention, and without the leaſt ill conſequence in other reſpects. But where there is no immediate danger, it is better to employ gentle narcotics, and the application of rolls of linen dipt in ſtrong vinegar, and introduced into the *vagina* only. For it is poſſible that more powerful aſtringents, particularly vitriol; or the immediate application of them to the *uterus* itſelf; may act beyond their intended bounds, and corregate the *uterus*, ſo as to cauſe a total ſuppreſſion of the *lochia*: which may have equally, though more remote, bad conſequences, with the hœmorrhage itſelf.

In low ſcorbutic habits, where the blood appears colliquated, and the flooding, though not very profuſe, continues obſtinate in its duration, and, moſt frequently in ſuch caſes, attended with a ſlow fever; ſmall doſes of the bark ſhould be frequently given, along with a nutritive diet; and the patient ſhould be allowed to drink a moderate quantity of red port wine, if it agree in other reſpects with her; or otherwiſe of any cordial white wine. There is a pre-

prejudice againſt the uſe of wine in theſe caſes, under a notion, that the circulation being quickened, the effuſion muſt be increaſed: and the reaſon would hold good, if hœmorrhages depended on the velocity of the motion of the blood: but we ſee them frequently the moſt obdurate with the loweſt pulſe; and know, from the manner they are relieved by aſtringents and opiates, that it is the relaxed or ſpaſmodic ſtate of the veſſels, and the broken colliquated ſtate of the blood, and not the *impetus* of it, which occaſions their continuance. In caſes of more profuſe floodings, therefore, where the patient is low, a glaſs or two of wine will ſometimes, as I have ſeen, more inſtantly mitigate, or even ſtop them, than any other remedy which can be applied.

It muſt be remembered, nevertheleſs, that when floodings are very violent, ſo as to threaten the death of the woman in a ſhort time; or if they be leſs exceſſive, and give no way to the above directed means; nor afford any hopes, after ſome time, of their diminiſhing, the *placenta*, or membranes, or any part of them which may have remained in the *uterus*, ſhould be delivered; as has been above intimated: unleſs where there appears ſchirroſities, or fungous excreſcences, to which the *placenta* is joined.

SECT.

SECT. IX.

Of pains and convulsions after delivery.

DR. ASTRUC has been particular, in his consideration of the convulsions, which happen during labour: but he has not taken any particular notice of those that sometimes succeed it, even, in some few cases, with fatal consequences; nor of the continuance of pains like those in labour, called *after pains*; and which are indeed then only a species of convulsion.

These pains, attended, though rarely, with other convulsive symptoms, frequently arise, where there is a considerable flooding, from the clots of coagulated blood: which irritating the neck of the *uterus*, excite pains and efforts for their expulsion. In other cases, they arise from an irritable state of the *uterus*, occasioned by some injury it has received; and from the general disposition of the woman to spasmodic affections.

In cases of the first kind, where the flooding is not to a dangerous degree, the remedy may be left to nature, or a little *diacodium* only may be given. For, as the natural restorative contraction of the *uterus* after delivery diminishes the discharge, and lessens also the cavity, the coagulation will cease. But where, nevertheless, both the flooding and pains continue, as they reciprocally support each other, the means directed in the preceding section, for the treatment of continued floodings, must be used: and whenever the hœmorrhage ceases, the pains in this case will go off.

When

When there is no extraordinary diſcharge of blood, and the orifice of the *uterus* appears cloſed, and yet, at the ſame time great labour-pains are felt, with other ſpaſmodic diſorders, but without any appearance of inflammation, either from the pulſe, heat, throbbing, or continued pain in the *uterus*, it may be imputed principally to the irritable ſtate of the patient; and gentle opiates, adminiſtered as above directed, with a moderate proportion of ſome cordial wine, will remove the complaint.

But where, without any extraordinary flooding, or diſcharge of coagulated blood, the pains continue in this manner, with appearances of fever, heat, pain and throbbing in the *uterus*, there is reaſon to apprehend a tendency to a bad inflammation: and bleeding, even repeatedly, if there ſeem occaſion, ſhould be ſubjoined to the uſe of the opiates. And by the due uſe of clyſters, and gentle cathartics, the body ſhould be kept open.

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INDEX.

A.

ABORTION, see *miscarriage*.

ACCOUCHEURS, what, [8]—antiently were physicians, [28]—are really of the body of surgeons, [29]—have renounced chirurgery, [30] — the word new, - - [8]

ADAM and EVE, answer to a letter concerning, - 221

AETIUS approved of delivery by the feet, - [17]

AFTER-BIRTH, or coverings of the *fœtus*, what, 16—different parts of, *ibid.*—in a constant position in the *uterus*, 18 - - physical causes of, 19—conduct in the extracting of, 50—hard and difficult labours proceeding from, 134—remaining in the *uterus*, bad effects of, 137—care in extracting, not to reverse the *uterus*, 138—method of separating when adhered to the *uterus*, *ibid.*—necessity of a speedy delivery of, 135—method of detaching, 138—description of, 263—conduct to be observed, when remaining after the delivery of the child, - - 325

AGNODICE, disguised herself to practice midwifery, - - [9]

ALBUCASIS, approved of delivery by the feet [9]

AMNION, or interior membrane of the after-birth, description of, - 17

ANIMALCULA in *semine*, opinion of the existence of, 239--supposed resemblance of to tad-poles, 240- -the existence of denied, 241- - two questions arising from the notion of, - 242

APOPLECTIC swooning, attend convulsive motions of the *uterus*, - 184

ARMS, in delivery by the feet, attention to be given to, - - 59

ART *of delivery*, summary history of, [1]—by whom exercised, [2]—as antient as the world, *ibid.*—how brought to perfection, [11]—in what state in the time of Hippocrates, [12]—useful reflections by Celsus towards the improvement of, [14]—fundamental regulations of the practice of, [18]—first treatise on, [28]—

[28]—antiently exercised by women, [29]—reduced to a mechanical problem, [36]
ASCITES, see *dropsy*.
AVICENNA approves of the delivery by the feet, [17]

B.

BACK, method of returning the child when it presents by, 101—precautions to be taken in, - - 102
BAPTISM, care to be taken to have it conferred on children in danger of death, 213—how to be administered in different cases, 214, 215—internal, decision of the Doctors of Sorbonne on, - 216
BASON, the place which contains the *uterus*, 1—bones which form it, what, 2—comparative view in man and woman of, 6—differences of, *ibid.* — two straits in a bad conformation of, 7—separation of the bones of, possible, 8 --bad conformation of, 25 --method of knowing, 26 --hurtful to delivery, 117 --when necessary to perform the Cæsarean operation in consequence of, 26
BATHING, proper after delivery, - 71
BAUCHIN's observations on the Cæsarean operation, 202
BENOIT (*Alexander*) approves of delivery by the feet, [17]
BLEEDING, convenient in the beginning of labour, 40 — proper in miscarriages, 154 — proper in convulsive motions of the *uterus*, - 135
BONES, which form the bason, what, 2—description of, - - *ibid.*
BOURGOIS (*Louisa*) first introduced forcible delivery, in case of great flooding in pregnancy, [22] — judgment on her treatise on delivery, - - 35

C.

CÆSAREAN operation, description of, 193—manner of performing, 194— — the rupture of the *uterus*, 180—observations on, 198 — —when necessary to be performed, - - 208
CALCITRATION, or *kicking of the child* against the *uterus*, error of imputing the pains and efforts to, 286
CAPILLAIR syrup of, recipe for, - 287
CATAPLASM, for the swelling of the *vulva* after delivery - - 68
CAUL, what, - 45
CESLUS useful reflections of, on the art of delivery, [14]
CHILDREN, NEW-BORN, conduct to be observed toward, 77, 308—how to be cleansed, 79, 313— —necessary to procure the requisite evacuations of, *ibid.* — —necessary to examine into the state of the different parts of the bodies of, *ibid.* — —

ibid.——regard to be had to the dreſſing of, 80, 314 ——manner of feeding, 316 ——proper to give a little ſweetened wine to, 80——conduct to when born weak in conſequence of the hardneſs of the labour, *ibid.* ——inſtructions for tying the umbilical cord of, 308 ——not capable of living, when born before the ſeventh month of pregnancy, 147—when ſaid to be in the paſſage, 12—crowning the birth, what, 43—conſtant upright poſition of in the *uterus* not true, 253—remedy for the aceſcent diſeaſes of, 323—how to be brought to life, when they do not breathe after they are born, 311

—DEAD, in the *uterus*, during pregnancy, by what ſign diſtinguiſhed, 156——in delivery, *ibid.*——haſte requiſite in the extraction of, 159——conduct in the delivery of, *ibid.*

CHIRURGERY antiently practiſed with phyſic, [29] reaſon for parting the two arts, *ibid.*

CHORION, exterior membrane of the after-birth, deſcription of, [16]—reaſons for believing it adheres to the *uterus*, 249

CLYSTERS proper to be given on the coming of the firſt pains, 39—neceſſary in the milk fever, 76

COLIC of the woman newly delivered, removed by an oily draught, 68

COMADRE, Spaniſh name for a midwife, [6]

COMARI, Italian name for a midwife, [6]

CONVULSIONS, *violent*, conduct to be obſerved in, 294——preceding delivery, method of remedying, 295——opiates proper remedy for, 362

COSTIVENESS of a lying-in woman, compoſition of a clyſter for preventing, 71

COTYLE, a cavity in the bones of the *iſchium* ſo called, 5

COTYLEDONES *uterine*, what, 260 — *placentary*, what, 278—uſes of, what, 260—two parts of, *cortical* and *medullary*, 279

COVERINGS of the *fœtus*. See *after-birth*.

COCCYX, deſcription of, 4

CROTCHETS, antiently in uſe for extracting dead children, [25]—crooked forceps preferable to, [27]

CULBUTE, or turning of the child, 33—cauſes of, 32—at what time, takes place 33—changes the form of the belly of the mother, 34—not true, 253

D.

DELIVERIES, neceſſary preparations for, 37—*natural*, 41——firſt kind of, *ibid.*——ſecond kind of, 51——reaſons for 52—comparative view of the two kinds of, 60—conduct of the midwife in the

first kind of, 47—second kind of, 55—that are *not natural*, 81—*hard* and *difficult*, proceeding from the child's presenting the head and body obliquely, 98 ——the head and one hand, 85—— the face upwards, 86——the feet, 89——one foot, or one foot and knee, 90—— toes upwards, 92—— hands, 94——elbows, *ib.* ——shoulders, 96——knees, 98——one knee, 99—— one leg and one knee, 100 ——the back, 101, 102 ——the belly, 105—— from the *mother*, 108 —— from the oliquity of the *uterus*, *ibid.*—— from the weakness of the *uterus*, 112——from the orifice of the *uterus*, 113 ——from the vagina, 115 ——from the *bason*, 117 ——from the coccyx, 122 ——from the *child*, 123 ——from the child's head being too big, 124—— from the child's being dropsical, 127——from the child's being of a monstrous form, 130——from there being two children in the *uterus*, 132—— from the *after birth*, 134 ——from the placenta, *ibid.*——from the after-birth remaining in the *uterus*, 137——from the *umbilical cord*, 140—— from the *coverings*, 142 ——from causes merely accidental, 143—progress of, 34—when thought to be effected, 36—when near an end, 46—clandestine, duty of midwives in, 210

DESCENSUS, or falling down of the *uterus*, 155—complete or incomplete, 176—caused by forcing away too strongly the *placenta*, 345 —how prevented, 303

DOLE, judgment of, in favour of the delivery by the feet, 62

DRINK, proper for lying in women, 76

DROPSIES of unborn children, how distinguished, 127

E.

EMOLLIENT *decoctions* assist delivery, 39——*vapour* of, when proper to be used, *ibid.*——*clysters*, when to be given, *ibid.*

EXAMINATION of the parts, before delivery, 22—of the *vagina*, 23—of the bones of the bason, 25—of the orifice of the *uterus*, 27—of the position of the *uterus* itself, 29—whether women be really pregnant, or not, 30—manner of, 31 ——in the progress of delivery, 48—of the body of children newly born, 79

F.

FALSE-GERM, wrong notion of a real conception, 147

FALSE-PAINS what, and how caused, 34

FEET, advantages of delivery by, 66
FEVER, *Milk.* See *Milk-fever.*
FLOODINGS during pregnancy, conduct to be obſerved in, 291—remedy for moderating, 292—after delivery, how to be treated, 355
FOETUS, natural poſition of in the waters, 20—takes a new poſition at the end of nine months, 21—occupies in the *uterus* the leaſt ſpace poſſible, 22—admirable mechaniſm for changing the ſituation of, 32—obſervations on the means, by which it receives its nouriſhment, 255—obſervation on the queſtion, Whether nouriſhed by communication of blood with the mother, *ibid.*—its *nutriment*, of a chylous or milky kind, 280——red blood no part of, *ibid.*
FORCEPS (Mr. Levret's) preferable to crotchets, in extracting a dead child, [27]——a mole, *ibid.*——the head of a child, remaining in the *uterus*, *ibid.*
FUNDUS of the *uterus*, what, 10—grows thicker by dilitation, *ibid.*

G.

GALEATIUS, regards as againſt nature deliveries by the feet, [16]
GALEN, thought delivery by the feet againſt nature, [16]
GORDON, thought delivery by the feet againſt nature, [16]
GREEKS, the women among them aſſiſted at labours, [3]

H.

HEAD *of the child*, obliquely ſituated in the *uterus*, may be redreſſed by the good ſituation of the woman, 84—how to rectify, 85—reſting in the *uterus* cauſe of, 162—different remedies for, *ibid.*——inconveniencies attending all but Mr. Gregory's, 164—preſenting of, 41——object of attention, when, 48—advantages in delivery by, 62
HEBAMMEN, or *de Heben lever*, German names of a midwife, [6]
HEBREWS, among them women officiated at labours, [3]
HIPPOCRATES's deciſion in favour of delivery by the head, 60
HYDROCEPHALON. See *dropſies.*
HYGINUS, wrote a treatiſe to prove the antients had not midwives. [9]

K.

KERMES, *confection of*, recipe for, 234
KICKING *of the child*, See *calcitration.*

L.

LABOUR, the greateſt difficulty of in the orifice of the *uterus*, 11—what proper to be done at the approach of, 38—how to judge of hard and difficult, 44—ſigns to know the beginning of, 43—principal objects to be attended to in the height of, 48—natural, conduct to be obſerved in, 301

LABOUR-PAINS, obſervations to be made on, 47—effectual or ineffectual, how to be diſtinguiſhed, *ibid.*

LEVATRICE. See *midwives.*

LILIUM, recipe for, 235

LOCHIA, what, 47—obſervations neceſſary to be made on, 69

LYING-IN-WOMEN, manner of conducting when newly delivered, 67—proper regimen for, 68—how to be treated in caſe of miſcarriage, 150

M.

MAIDEN-HAIR. See *Capillair.*

MAMDIEGUES, *Celtic* name of a midwife, [6]

MATRONES. See *midwives.*

MECONIUM, or firſt ſtool requiſite to be procured, 79

MEMBRANES, what. See *after-birth.*—when to be broken, 305

La MERE, the *unguent of*, recipe for, 237

MIDWIVES, ſpoken of in Geneſis and Exodus, [2]——in the firſt book of Kings, [3]—Plato ſpeaks much of, *ibid.*—Hippocrates, Ariſtotle, and Pliny, mentions, *ibid.*—Moſchion ſpeaks of, [4]—the comedies of Plautus and Terence prove them among the Greeks, *ibid.*—etymology of the Latin name given to, *ibid.*—known in the fall of the Roman empire, [5]—have divers names in different countries, [6]—not among the antients, according to Hyginus, [9]—how to act immediately after the coming out of the child, 36—Mejallodeth, Hebrew name of, [3]—Greek names for, [4]—different names of, [6]—obſervations to be made, and aſſiſtance to be given by, 47—duty of, to obſerve if the child preſent by the feet, 53—two important points to be obſerved by, 106

MILK-FEVER, conduct of a prudent midwife in, 71—cauſes of, 72—ſhivering or cold fit produced by, 73—management of a woman in, 76

MILK-*uterine, diluted*, the *pabulum* of viviparous animals, 280

——*concentrated*, the *pabulum* of oviparous, *ibid.*

MISCARRIAGE, how a midwife ſhould act where there is

is a danger of, 144—what, 146 — of the two first months, without pain, 147 ——without hæmorrhage, *ibid.*— —without trouble, *ibid.*— — confirmed, conduct of the midwife in, 148 — — undecided, 145 —bleeding and sleep first succours for, 154—how a midwife should act, when called to a woman who has procured her own, 153

MOLES, three kinds of, 167 —first kind of, *ibid.*— — second, 168—third, *ibid.* —signs to distinguish the first kinds of, 168— — second kinds of, 169— — method of extracting, 170 —observations on, 280— not adhering to the *uterus*, 281—not caused by the growing of the *placenta*, *ibid.*—after the delivery of the child, 284—not false conceptions, 181

N.

NAVEL-STRING, what, 17 —the Prophet Ezekiel is the first that takes notice of the cutting of, [12]— vessels of, 17—ligature of, how to be made, 77— absurdity in leaving longer in boys than girls, 77— coming out before the child, cause of hard labour, 140—danger from its being twisted round the child's neck, 141 — — method of relieving from, 142 — its vessels do not communicate with those of the uterine part of the placenta, 275 — arteries of, 265—veins of, 266—conformation of, 265 — uses of its length, 271—bleeds only a few ounces when cut, 273—should have but one ligature, 310

NECK of the *uterus*. See *Orifice of the uterus*.

O.

ORIFICE of the *uterus*, what, 11 — most difficult place of in labour, *ibid.* — difficult labours produced by bad states of, *ibid.*—favourable dispositions of towards labours, 13, 44—bad dispositions of, 28 — scirrhus, disposition of, hurtful to delivery, 28

OS, *ilium*, description of, 6— *pubes*, description of, 5— *ischium*, description of, 7— *sacrum*, description of, 2

OSSA INNOMINATA, description of, 4—division of, 5

P.

PARERA. See *comadre*.

PARE' (*Ambrose*) approved of delivery by the feet, [17] —treatise of generation by, [34] — opinion which it carries, *ibid.*

PELVIS, See *bason*.

PERINÆUM, what, 190 — rupture of, what, *ibid.*— — young women more subject to than others, 191 — — method of remedy-

ing, *ibid.*— —precautions in, 192 —how to prevent the laceration of, 304
PERIODS, two neceſſary to be diſtinguiſhed in deliveries, 107
PHANARETE, mother of Socrates, a midwife, [3]
PLATO, ſpeaks largely of midwives, [3]
PLACENTA, conformation of, 263 —conduct to be obſerved when it remains after the delivery of the child, 325 — uſes of, as lungs, 271 —reaſons againſt the forcible delivery of, 343— does not grow when left in the uterus, 281—turns ſcirrhus when it continues to adhere, *ibid.*—does not bleed when delivered, 276
PROLAPSUS of the *uterus*. See *deſcenſus*.

R.

RABELS-*water*, recipe for, 237

S.

SAGES-FEMMES, French name of a midwife, [6]
SAINT SOPHIA thought delivery by the feet unnatural, [16]
SALPA, an antient midwife, [4]
SCIRRHUS diſpoſition of the orifice of the uterus is hurtful to delivery, 28
SECONDINE. See *after-birth*.
SEPTUM. See *perinæum*.
SERAPION praiſed delivery by the feet, [17]
SOUMAIN practiced with ſucceſs the Cæſarean operation, 207
STATIRA, an antient midwife, [4]
STRAITS, two, in the bad conformation of the baſon. See *baſon*.
SWELLING, *ædematous*, of the parts before delivery, 34—cauſes of, *ibid.*
SYMPATHETIC motions, what, 35

T.

THERIAICA, recipe for, 233
TOUCHING or examining. See *examination*.
TURNING of the child. See *cubute*.

U.

Vagina, faulty conformation of, 23
VALLESCUS de *Taranta* approves delivery by the feet, [17]
VALLIERE, (*the dutcheſs of*) the firſt who made uſe of a ſurgeon in her delivery, [8]
VARANDUS miſtakenly regards delivery by the feet as unnatural. [16]
UMBILICAL CORD. See *naval-ſtring*.
URINE, diſcharge of, requiſite to be procured in newborn children, 79
UTERUS, where contained, 1—brief deſcription of, 10 —divided

—divided into three parts, *ibid.*—fundus, what, *ibid.*—neck, of what, *ibid.*—orifice, of what, 11—moſt natural and advantageous poſition of, 13—in the beginning of labour, obſervations to be made on the ſtate of the orifice of, 48—poſition of, material to be known, 13—cauſes of the obliquity of, 14—deſcenſus, or falling down of, 175——incomplete or complete, 176—reverſing or inverſion of, what, 179—convulſive motion of, 182——cauſes of, 183—rupture of, 187—remarks on the body, or principal ſubſtance of, 260—adapted to other offices than that of utero-geſtation, 261—neceſſary to be anointed and fomented at the approach of labour, 39—conformation of, 267

VULNERARY-*water*, recipe for, 263

VULVA, a warm cloth proper to be applied to after delivery, 67, 68—when ſwelled, a cauſe of ſtrangulation, 68—cataplaſm proper to be applied to, *ibid.*—proper application to after-delivery, 348

W.

WATERS, *firſt*, what, 45—burſting of, neceſſary in delivery, *ibid.*—*ſecond*, or true, what, 46—form, when, 43

WOMEN, *pregnant*, how to be placed before delivery, 37, 296—method of managing when lately delivered, 67——in common caſes, 347

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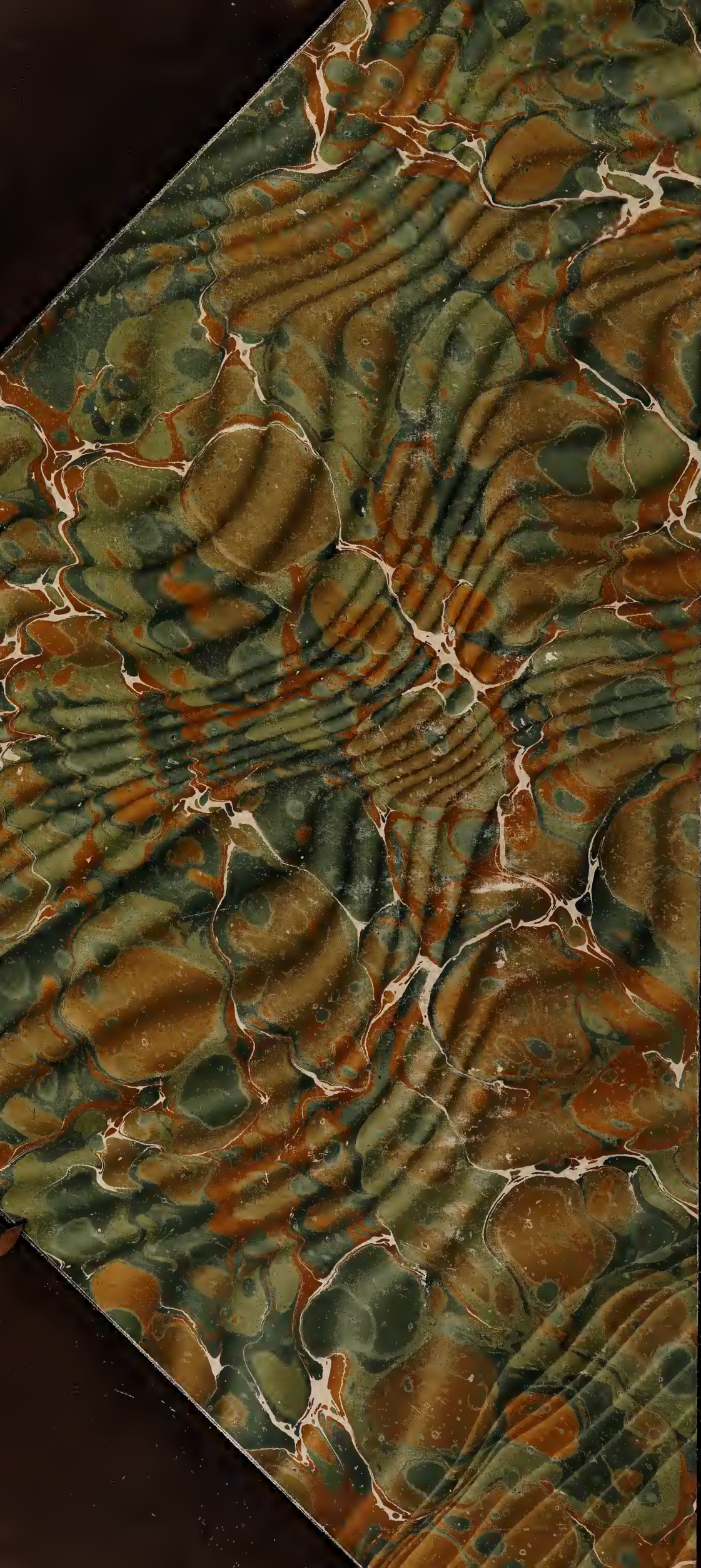
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